INDIA RUBBER WORLD AND ELECTRICAL TRADES REVIEW

Published on the 15th of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 47 TIMES BUILDING, NEW YORK, U. S. A.

JNO. R. DUNLAP. H. C. PEARSON.

Vol. 10. SEPTEMBER 15, 1894. No. 6.

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Orders or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES.—Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Trade supplied by the American News Co. and all its branches.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS.

PAGE.

Editorial:

Rubber-Goods Prices and the Tariff ... 161
Foreign and Domestic Methods Contrasted ... 161
The Remnant Problem ... 162

Death of Andrew R. Trotter ... 162
Rubber Hose for Hydraulic Placer Mining ... *Albert Williams, Jr.* 163
Standard Measurements for Rubber Shoes ... 165
Pneumatic Tires for Vehicles ... *Colonel Albert A. Pope* 166
The Behavior of Rubber Springs (*Illustrated*) ... *Harris Tabor* 167
Rubber Goods for Rainy Day Wear ... 167
Tire Protectors: Have They a Future? ... 168
An Official View of Rubber in Brazil ... 169
The Rubber Goods Trade in Brooklyn ... 171
Some Features of the Para Rubber Trade ... 172
Biographical—Edward W. Harral (*With portrait*) ... 175
Brief Abstracts of Recent Rubber Patents ... 177
New Goods and Specialties (*Illustrated*):

Reinforced Skivings ... 180
The Peerless Combination Matting ... 180
A New and Popular Sheet Packing ... 180
The Morgan & Wright Tire ... 181
An Improved Essex Syringe ... 181
The Rover Carrier ... 181
A Pneumatic Car Fender ... 182
An English Pneumatic Wheel ... 182
Victor Pneumatic Valve and Choker ... 182
The Common Sense Chair Tip ... 183
Peerless Bicycle Trousers ... 183
A Detachable Folding Rubber Mud-Guard ... 183

Death of James W. Converse (*With portrait*) ... 183
Resolutions on the Death of James W. Converse ... 184
A Trifle Gossipy ... 185

Miscellaneous:

Elegant New Offices ... 162
Rubber Ball Industry of England ... 166
The Wide Use of Pneumatic Cushions ... 170
His Rubber Boots Saved His Life ... 170
Pneumatic Soles for Shoes ... 170
Drying Apparatus in a Rubber-Mill ... 170
Random Notes From Pará ... *Grao Pará* 173
Gutta-Percha and India Rubber in Horse-Breaking ... 174
Letters to the Editor ... 174
Rubber-Planting in Costa Rica ... 175
Rubber Production of Ecuador ... 175
Tea-Planting and Rubber ... 176
Price-List of Rubber Tree Seeds ... 176
English Rubber Factories ... 176
Reports of Rubber Companies ... 176
Adulteration in the Tire Business ... 176
Life Preservers for a Navy Yard ... 188
Gutta-Percha Not Rubber ... 188

Trade and Personal Notes ... 186

RUBBER-GOODS PRICES AND THE TARIFF.

THE folly of depending upon Congress to make the country prosperous, pointed out in these pages in connection with the Sherman-law repeal a year ago, has received fresh proof in the recent disposition of the tariff question. While other causes have contributed to the depression of trade—which, by the way, is by no means confined to the United States—uncertainty as to what Congress might do with the tariff undoubtedly has kept many industries at a standstill for months past. People have seemed to feel that it was unnecessary to put forth any of the efforts without which no business can be done in the most prosperous times, assuming that the situation would be better when Congress should "do something." Thus there have been an idle working-class, a diminished consumption of goods, and reduced profits for merchants. But now that a new tariff law is in force, what will be the effect upon the business situation? There will be improvement—but only in proportion as such efforts are put forth as would make business good regardless of Congress or tariff bills.

It happens that, after all the agitation in Congress, the new duties do not differ materially, except in a few schedules, from the rates in the McKinley law, so that little adjustment to new conditions is necessary. The rubber industries are for the most part unaffected. Since we do not import rubber boots and shoes, it is immaterial what the duties on this class of goods may be. The same is true of belting, hose, and other mechanical goods, of which, instead of being importers, we are beginning to be exporters on a considerable scale.

The fact is that the United States to day have the lowest-priced rubber goods in the world, quality for quality. A comparison of the list prices (including the discount list) of a large mechanical-goods factory in England with the figures from a factory of similar importance in the United States, shows that goods are cheaper to the consumer here than there, to say nothing of the better quality of our goods. While the English manufacturer enjoys an advantage in the cost of labor, the greater economy of manufacture here is such that in an unrestricted market there is no danger that mechanical rubber goods of American make could be undersold by any other country.

What has been said above is so widely appreciated in the rubber trade that the manufacturers in this line have been little interested in the football game which Congress and the President have played with the tariff at Washington. Doubtless there are other industries in which the example of the rubber-manufacturers might have been followed with profit.

FOREIGN AND DOMESTIC METHODS CONTRASTED.

A CLOSE observer of the rubber trade, both at home and abroad, thus speaks of the factories in England and on the Continent.

"Those of us who are accustomed to large, finely ap-

pointed rubber stores arranged in departments, with facilities for distribution over a large area, will be disappointed on looking for the same things abroad. There are no such displays of goods there as we have, for the reason that they follow almost to a man a conservative order business. If in an emergency a customer wanted, for example, a large amount of rubber belting, it could not be had at once. The only way to get it would be to have it made to order, the purchaser waiting until it is manufactured. This is true in every line of rubber manufacture, except perhaps in Druggists' Sundries. Here, the peculiar nature of the business requires that more or less stock be carried.

"In the making up of rubber goods, the American manufacturer strives to do all he can by the introduction of labor-saving machines. On the other hand, the foreign manufacturer is equally anxious to push his labor to the front, and in every way encourages hand-work. The European laborer works for about 60 per cent. of the wages paid to his American cousin, but it is all he is worth when one considers the amount he accomplishes daily.

"An example of the machinery in use may be shown, by citing the fact that numbers of large foreign plants still use the belted mixing mills with 12 inch rolls,—machines that long ago have found their way to the scrap heap in America, and been replaced by grinders that do eight or ten times as much work."

THE REMNANT PROBLEM.

"I WANT thirty feet of half inch hose," said a customer, entering the store of the Gutta Percha and Rubber Manufacturing Co. in Toronto. President Warren of the Company stood near by as the order was given, and turning to the writer said :

"Here comes the vexed question of remnants, something that gave me a vast amount of trouble when first I took charge of this business. Suppose we follow the clerk (he pronounced it *clark* in the most fashionable Toronto English) and see how he disposes of it."

A cordial assent being given, we wended our way to the next floor which is occupied as a stock room for hose and belting.

The room was fitted with neat looking bins that were built close to the walls, the floor in front of each bearing in plain lettering the name of the kind of goods contained within. Above the bins ran a broad shelf, also marked with the names of the goods in the bins beneath.

"That shelf," said Mr. Warren, "solves the problem. Whenever a bale of hose is opened and a length cut, the unsold remainder is put on that shelf. It is in plain sight, and every employé knows that when a small order comes in, his first duty is to see if it can be filled from the shelf lot. I have impressed it upon them that the profit in our business lies right in that insignificant pile of left overs. By having it all in plain sight, and as rigidly classified as if it were the important appearing unbroken lots, they cannot overlook it, nor is it any trouble to find out at once whether or not there is a remnant that will fit the sale. I do not know how it may be in other factories, but when I came here the remnants were thrown in a heap in a dark corner, and how that heap did increase. The most conscientious salesman dreaded to overhaul it in search of short lengths. Now we have no such trouble, and as you see our remnants are very, very few.

"I use the same system with belting, and as far as practicable with other goods, and it works like a charm."

ELEGANT NEW OFFICES.

THE Home Rubber Co. (Trenton) have made a departure in opening offices in the new Postal Telegraph Building, New York. They are arranged on either side of an ante-room leading off from the main hall on the ninth floor. One office is used for a sample room and for the clerical force. It is fitted with tasteful cases in which are displayed samples of all of the goods made by the company. Here will be the headquarters of the city salesmen. On the other side of the ante-room is a reception room for customers, furnished in oak, and Russia leather. The floor is covered with expensive rugs. The walls are hung with handsome pictures, there is a long distance telephone, messenger calls, and every convenience that either the city or outside customer may desire. Mr. J. Oliver Stokes, the treasurer of the company, will make this office his headquarters and cordially invites the trade to inspect his new quarters, and especially asks Southern and Western customers to make this their business home while in New York.

DEATH OF ANDREW R. TROTTER.

ANDREW R. TROTTER died at Bristol, R. I., on August 24, in his seventy-second year. He was born at Newcastle-on-Tyne, England, and was brought in childhood to New York city, where he grew up with his father in the leather business. He became connected with a rubber company in Harlem, and later went to Providence, R. I., entering the employ of the Providence Rubber Co. He continued with that company until its removal to Bristol, under the name of the National Rubber Co., and was its general agent until it became the National India Rubber Co., a few years ago. Mr. Trotter took a marked interest in the affairs of the town of Bristol and was a member of the Council from 1877 until 1888, serving as president during the last two years. He was a trustee in the Bristol County Savings Bank, a director in the Rogers Free Library, a member of the advisory board of the Home for Destitute Children, a member of St. Albans Lodge, A. F. and A. M., and of United Brothers Lodge No. 13, I. O. O. F., and a vestryman of St. Michael's Episcopal Church. The funeral occurred on August 27 from the church named. The pallbearers were Augustus O. Bourn, E. S. Babbitt, W. J. Bradford, and John W. Best. The deceased is survived by a widow and three daughters, Mrs. Dr. Fisher of New York city, Mrs. C. W. Perry of Providence, and Miss Eleanor Trotter—and one son—the Rev. William R. Trotter, rector of Trinity Episcopal church, of Bristol.

THE pneumatic-tire factory of Morgan & Wright, Chicago, is reported to have a capacity for making 6000 complete tires per day.

RUBBER HOSE FOR HYDRAULIC PLACER MINING.

By Albert Williams, Jr., Mining Engineer, Denver.

HAVING recently, in the course of professional business, had occasion to look into the question of rubber hose for hydraulic placer-mining (or rather, such hose as an adjunct to the wrought-iron and steel piping), the results of the inquiry are here presented as a matter of interest to some of the readers of THE INDIA RUBBER WORLD. Nearly all the factories making and agents selling rubber fire- and hydraulic-hose were addressed, and in most instances it transpired that the rubber manufacturers had given but little attention to the subject, but were desirous of information as to the conditions and requirements for this line of goods. Five or six companies, however, have made a specialty of this trade.

Hydraulic mining consists in attacking banks of gold-bearing gravel by streams of water under high pressure, the same water which cuts into the gravel beds being employed to transport the material away and to wash it in sluices, where, by gravity, assisted by quicksilver, the particles of gold are arrested in the riffles, either as gold or as amalgam, which are subsequently recovered from the sluices by cleaning up, in which last operation water also is the principal agent. The process is one of beautiful simplicity, rapidity, and economy, labor and machinery being almost entirely dispensed with. There is one record,—that of the North Bloomfield mine,—of hundreds of thousands of cubic yards of low-grade gravel having been handled and made to pay a small profit on an average return of but 2.9 cents per cubic yard, or say a little over 2 cents a ton. In ordinary cases, however, an average tenor of 20 cents or more is required. The process is said to have originated in 1851 at Yankee Jim's, California, where an enterprising gold-digger used a small rubber hose (probably one inch or less diameter) supplied from a ditch terminating in a barrel at a small elevation above his claim. From this humble beginning the industry grew rapidly to immense proportions, from $10,000,000 to $20,000,000 annually having been produced by the California hydraulic-mines alone during more than twenty years; while the method has been successfully introduced into many parts of the western United States and in most of the gold-placer regions of the world. The industry of late has been under a cloud, owing to adverse legislation in California; but it is again showing signs of renewed activity, so that there now appears to be a market for a considerable amount of hose, within limitations to be presently mentioned. The decadence of silver-mining has had the effect of turning the attention of miners and investors more seriously to gold-mining, so that, besides the quartz-mines, many new hydraulic claims are being worked and old ones reopened.

In hydraulic mining on the large scale the water is led from a reservoir or from a stream at some distance (from 2 to 40 miles or so) above the mine, in ditches, flumes, and steel inverted siphon-pipes, to a point immediately above the mine, and from 100 to 600 feet above the bottom of the working face. Here a strainer and pressure-box are put in, and a large iron or steel pipe, or pipes, take the water down to the giant nozzles. Still, in spite of strainer and mud-settler, the water is likely to be muddy and to contain some grit. Where the water-supply is very plentiful, the feed pipe may connect with a distributor (a cast-iron contrivance with screw gates), and either two-way, three-way, or four-way. From this the smaller working pipes extend to the giants. The feed-pipes may be from 16 to 22 inches diameter, or more. They were formerly made of wrought iron, but now mainly of mild steel. They are made either with longitudinal and transverse-riveted lap-joints, or spiral-riveted, or spiral-welded, and in future may be of seamless tubes. The lengths are usually 16 feet each. The usual connection is by inserting the end of an upper joint into the flared end of a lower one, the two being secured by wiring around projecting lugs. There is practically no leakage.

The giant nozzles are heavy, elaborate concerns designed to obviate kicking and bucking, to be directed easily and steadily, and to throw a solid stream. For this purpose the inside of the nozzle is "rifled," but the flanges (corresponding to the lands of a gun), instead of being spiral, are straight, to prevent the stream from twisting and breaking. They are from 4 to 9 inches in diameter, a 6-inch nozzle being considered a fairly large one. Smaller hand nozzles are of 3 or 2½ inches diameter, of iron or brass. They are sometimes slung from a tripod. Nozzles are constricted, in the ratio of 3:2 or 2:1, of the supply-pipe.

The smaller supply pipes leading to the nozzles require a certain amount of flexibility which is not possible with metallic jointed pipes. This flexibility need not be very great, but the pipe should not kink. The small stiffness given by armoring is not objectionable.

In placer-mining water is not rated in gallons or cubic feet, but by an arbitrary unit called the "miner's inch." This unit varies considerably in different localities, according to the size of gage orifice, pressure above orifice, and time (whether for 10, 12, or 24 hours); but a definition commonly accepted is "the quantity of water which will flow in one minute through an orifice 1 inch square, when the head on the center of the orifice is 6½ inches." This gives a flow of about 1½ cubic feet per second. Single hydraulic mines rarely use less than 100 inches, and from that up to 5000 and 6000 inches (the larger quantities being subdivided into several streams). Of course the efficiency depends on the head as well as upon the quantity ($E=Q \times H$). Pressure is always measured in feet of head, not in pounds per square inch. The weight of a cubic foot of fresh water being about 62½ pounds, a column of water 100 feet high gives 6250 pounds pressure per square foot and (6250÷144) 43.403 pounds per square inch at the bottom,

though in practice friction and irregularities somewhat reduce this value. Still, these figures serve as a basis for computing pressures to be resisted. If the best fire hose is guaranteed to withstand 400 pounds per square inch (and many brands are made to carry 300 pounds while special makes have withstood 800 pounds and more), it is evident that a carefully made rubber and duck hose, designed for the purpose, would be good for at least 300 feet (say 130.2 pounds pressure) when new and in good condition, and this would fulfill ordinary requirements; but owing to the rough usage, which rapidly deteriorates the hose, this must be considered about the maximum head allowable, unless a more costly construction is attempted than would successfully compete with wrought iron or steel pipe. In placer-mining less than 100 feet head is not often used, not giving enough power. From this the head may range up to 600 feet or more, but most hydraulic mines employ between 200 and 300 feet head, as greater pressures introduce difficulties which more than offset increased theoretical efficiency of very high heads.

For moderate pressures, of between 100 and 200 feet head (and of course for anything less than 100 feet), rubber hose answers well so far as initial resistance goes, but for the lower heads it comes into competition with the cheaper canvas hose. The question, then, between it and its competitors hinges upon relative price, durability, and convenience, with possibly some minor considerations.

A great variety of makes is to be found in hose sold for hydraulic mining. Besides the large iron and steel pipes for high pressures and permanent plant, there are a long list of goods manufactured for, or which might be utilized for, this purpose. The ideal hose would be made like the best rubber fire-hose, but of larger diameters and in greater lengths, with at least 5 ply for sizes just above the 2½-inch standard, and 6, 7, or 8 ply for the larger sizes, say up to 10-inch bore, beyond which there is no immediate probability that rubber hose could compete with iron and steel pipes. One company manufactures a rubber hose precisely like its best fire-hose, but of 3½ and 4 inches diameter. Of the combination hose, other than standard rubber fire hose style, there are cotton and linen hose lined with rubber, and rubber tube jacketed with woven cotton, with single and double jackets differently applied. Then there is plain cotton duck and linen hose. One brand of cotton hose is carbolized and is claimed to be exempt from mildew and rot. The cotton duck should be extra heavy, made for the especial purpose, and from selected long-fiber cotton stock. Both the rubber-lined and unlined cotton hose, as also some of the rubber hose, are sometimes armored as a protection against abrasion and collapse. This armor consists either of a serving of marlin, or a wrapping of canvas served over with marlin, or more commonly with spiral-wound wire, the winding being such that the wire will grip and not uncoil when the hose is cut. This wire may be either flat or round, of brass, copper, plain iron and steel, or of these metals tinned or "galvanized" with zinc. The armor clad hose is of course much more expensive than plain hose, but is also far more durable. While wire winding will not make a poor hose good, it may economize the fabric and friction to obtain a given strength, or, if applied to the best hose, largely augment its initial resisting strength and also its durability. Plain, heavy, cotton duck hose, triple-stitched, is said to be good for 300 pounds pressure when new, but manufacturers do not like to guarantee this line of goods as they do the higher grades of rubber hose. The sizes sold especially for hydraulic mining range from 6 to 10 inches internal diameter, the list price on plain duck hose being generally 10 cents for each inch of diameter above 5 inches, subject to large discounts. This is of course much cheaper than high grade rubber hose can be sold. For very moderate and low pressures such hose will answer. A certain amount of sweating under pressure does not condemn a hose, as there is usually a surplus of water.

For hydraulic-mining use, longer lengths of hose are desirable. Most manufacturers supply only lengths of 50 and 25 feet, though one establishment turns out rubber hose in 100-foot lengths. The service is entirely different from that of fire-departments, in that the arrangement is more permanent. A multiplicity of couplings is not wanted. Lengths of 100 feet, and longer if possible, would be in demand. It is always easy enough to add on short lengths when needed to make out a line.

Couplings of hose for this purpose should be simple, strong and cheap. There is no occasion for rapid coupling and uncoupling, as in fire service; hence a very simple form can be adopted.

Hydraulic mining service is very rough indeed. The hose is dragged over sharp rocks and is exposed to extremes of temperature. It may not be in constant use, and when idle will be exposed to the sun and weather. It is not subject to being run over by vehicles, but boulders and loose rocks and dirt may cave in upon it. When bursted, the leak is usually covered with a piece of canvas and served over with marlin or small rope. A simple form of mending clip might possibly be of use.

It is evident that, while rubber hose with a good strong fabric of many ply and armored could be made to carry large volumes and withstand excessive pressures, it could not economically supplant the large iron and steel feed-pipes. Nor, on the other hand, would it be economical to replace canvas hose with a rubber combination for very low heads. The proper field for rubber hose, therefore, is for service under intermediate pressures. Just what range it could profitably occupy is a difficult question to answer. But there is no doubt that there is a larger possible market here than has hitherto been worked up. Manufacturers should endeavor to supply extra strong goods at a moderate price. Fine finish and very true and smooth bore are not so important as strength and durability under trying conditions. In remote regions, where freights are high and the time needed for replacing plant long, users would be willing to pay considerably higher prices for a good rubber hose than for canvas hose. This question of transportation obtains in many districts in out-of-the way places, and opens the market for rubber hose beyond the ordinary demand.

The rubber factories are ready and able to make hose

of almost any diameter, number of ply and strength that might be required, very strong suction-hose, for example, having been made up to 18 inches internal diameter. There is no question as to the capability of the works turning out successfully whatever might be ordered and to meet any reasonable tests. The real problem consists in a nice adjustment or compromise between high quality (and consequent high cost) and sufficient strength at reasonable cost. In every case the factories, if they take pride in their goods and prefer a successful record to a temporary profit on inefficient supplies, should ask the intending purchaser to submit exact specifications as to duty expected of hose, if the order is of importance. A thorough understanding between buyer and manufacturer would render the transaction more satisfactory on both sides; as the user knows what the requirements are but does not know much about what the offered goods will stand, while the maker, who thoroughly understands the quality of his output, may be rather in the dark as to what is expected, unless the two come together.

The quantity of rubber hose used in hydraulic mining is not large, and goes mainly to California, Montana, and Idaho, where, however, much larger amounts of canvas hose are used. Exports of hose for this purpose are made to British Columbia, Mexico and South America; but these countries also take much more canvas hose than rubber. As the goods are sold mostly through jobbing and supply houses, it is difficult to trace the destination, and it is not known with any approach to accuracy what the total amount of hose used for this purpose is. Fire-hose is too expensive in proportion to its size (2½ inches usually) to be bought for hydraulic-mining; but recently it was discovered that a quantity of rubber hose which had mysteriously disappeared from the stock of a western city fire-department had been stolen and sold at a nominal price for use in hydraulic mines.

There is a possible utilization of rubber hose of small diameter in cleaning up the sluices. Here there is little or no pressure, and very light goods would answer. For this purpose old canvas hose is generally used, but is too large. Rubber hose would be better and more durable.

Correspondence with a large number of companies showed that the hose manufacturers are very much alive to business. In every instance replies were received by return mail, accompanied with a flood of attractive catalogues, in which the relative merits of each brand were described with bewildering claims to superiority. Those companies which have had no experience in making this line of goods evinced much interest in the matter, asking for data as to requirements (specifications of sizes, pressures, and lengths), and offering to make up samples for inspection.*

To those outside of the trade the system of discounts is not a little perplexing. In dealing directly with mining men it would be well to quote a simple net price per foot, without caps or couplings (which should be quoted separately), f. o. b. at designated shipping point. Mining purchasers are bothered to understand the various discounts, and have to do some figuring to find out just what it all means. One man, after studying the list-prices and discounts, came to the conclusion that there was about nothing left to pay, computing the second discount on gross price instead of upon the remainder.

* Any inquiries as to peculiarities of service and special requirements of rubber hose for mining purposes will be cheerfully answered by the writer, who may be addressed in care of THE INDIA RUBBER WORLD.

STANDARD MEASUREMENTS FOR RUBBER SHOES.

AT the eighth annual convention of the Retail Shoe Dealers' National Association, held recently in Boston,* Mr. James Murray, of Woonsocket, R. I., reporting for the committee on standard measurement of lasts for makers of rubber boots and shoes, stated that he had talked with the Woonsocket Rubber Co., and that they had assured him that they were now following the standard measurements, as established by previous conventions of this association.

This matter of lasts for rubber goods having developed into a general discussion, Mr. William H. Gleazen stated that he had noticed a great improvement in the fitting qualities of the goods made by the various rubber companies. He said that there had been a great improvement in the styles, and he complimented the manufacturers for this advancement. The trouble that most of the gentlemen present had experienced was that a certain sized rubber shoe would not fit the same sized leather shoe. It was necessary in many instances to sell a size 4 rubber to fit a 3½ shoe, and so on. President F. W. Gilbert stated that he had had the same trouble and would gladly welcome a change. Mr. J. J. Greene, of South Boston, found a variance in all of the different rubber goods that he sold, had investigated the matter, and was told that the constant heating of the lasts used by the makers of rubber boots and shoes caused them to shrink after a short usage. This appeared to be the keynote of the situation, and several members spoke in regard to it.

The "Bostons" and India Rubber Glove rubbers came in for many warm indorsements from the speakers, nearly all agreeing that these goods caused them less difficulty than many of the other makes.

Messrs. Burleigh, Nightingale, and Felt spoke in regard to the trouble which they had experienced with ill-fitting rubber goods, and Mr. Murray stated that he believed it was not generally known among rubber-manufacturers that they had a grievance in this respect. He believed that if they did they would be only too willing to remedy any difficulty. He suggested that possibly by conforming to the lasts used by the Boston Rubber Shoe Co. the desired results might be obtained, as these goods appeared to be fuller. He suggested the appointment of a committee from

* The notes given here are abstracted from a report in the *Boots and Shoes Weekly* (New York).—THE EDITOR.

among the dealers that were nearest to the manufacturing establishments of the various companies.

Mr. C. H. Marty said that the ladies would be pleased to get rubbers that were the same size as their shoes. Benjamin Dore, a Lynn shoe-manufacturer, gave an interesting talk on lasts, explaining where mistakes often occurred. The general sentiment of the speakers appeared to be that the present standard of lasts and measurements, as adopted eight years ago, needed revision, and then it would be time to ask the manufacturers of rubber footwear to conform to their requirements. Every member present believed that it would be money in their pockets if the rubber-manufacturers would run their sizes on youths' and children's goods the same as misses' in leather goods, from 11 to 2 instead of 11 to 13½, as at present. Mr. Loring M. Monk, with Sage & Co., of Boston, the well known agents for the Colchester Rubber Co., suggested that a committee be appointed to confer with the United States Rubber Co. It was voted that the chair appoint such a committee, and the president later appointed Mr. Murray and Mr. Israel C. Earle, and was himself added to the committee by a vote of the convention.

PNEUMATIC TIRES FOR VEHICLES.

By Colonel Albert A. Pope.

HAVING read with interest in a recent issue of the *Post* an article upon pneumatic tires for the ambulance, I was somewhat surprised that so little definite knowledge prevailed regarding their usefulness for various vehicles.

Incidentally, there was allusion to a common driving wagon in Meriden, Conn., equipped with these tires, which had been in use for six months without showing perceptible wear. That fact was mentioned as though it was something entirely new.

Common wagons so equipped, however, are in various localities, while light box buggies, phaetons, and other carriages similarly furnished for a longer time, are giving entire satisfaction.

Pneumatic tires were first used on trotting-sulkies in May, 1892, and that they have served to increase speed is a matter of record, while no report of a race lost because of these tires has ever been received. Since being introduced the improvements made in their manufacture have been such that any fear of trouble from puncturing is almost an unconsidered question by those familiar with their great adaptability, and if, from any cause while in constant use, such an accident should occur, there can hardly be any delay, as appliances belonging to these tires are such that one could soon be on his way again in almost as good condition as ever until more permanent adjusting of the difficulty was secured at leisure.

Experiments have proved they will stand remarkable wear and tear, while the yielding property of the rubber, if rough surface roads are traveled, enables one to enjoy great comfort and ease, free from the general jar of carriages; and if riding, for instance within the grooves of a street-car track, there is occasion for an immediate turnout, it can be made readily at any angle of the rail without forethought or injury.

The expense of using these tires, compared with the great benefits received, is hardly to be considered. It is reasonable from any standpoint, and while the wheels to which they are usually adapted are smaller, they are much lighter and stronger. Such wheels as described are made by the Hickory Wheel Co., of South Framingham, Mass., and the tires by the Hartford Rubber Co., of Hartford, Connecticut.

Again and again has thought found words in some such utterance as "I should think going so rapidly over paving stones and car tracks would jolt the life out of any one lying down inside"; or, "It would seem as though, beipg hurried along in that manner, very great harm might result," etc.

It is, therefore, occasion for gratitude that, among the improvements of our time, scientific skill has produced pneumatic tires in such a practical and lasting form that they can readily be applied to ambulances or other vehicles, and thereby reduce to a minimum all jar, jolting, or injurious effect, while one is being conveyed to any point, even though the way is perilous. It must be, I am sure, from lack of knowledge of results attained in the manufacture of such tires, and not from any mercenary motives, that hospital officials, as well as others in charge of invalids, have not advocated and insisted upon their adoption, especially as far as ambulance equipment is concerned; and if, by thus calling public attention to these important and humane appliances, their general use is speedily secured for the beneficent relief of suffering, I shall be more than satisfied.—*Boston Post.*

RUBBER BALL INDUSTRY IN ENGLAND.

IN England the Hille India Rubber Co., Limited, has been formed to manufacture rubber balls under the patents secured in that country and abroad by Gust. L. Hille. A factory has been established at Eccles, near Manchester, where all the processes of ball-manufacture are carried on. The works are large enough to require a steam-engine of 200 horse-power, and it is mentioned that a new smoke-consuming process is employed with complete success. The manufacture of rubber balls was formerly to a great extent monopolized by Germany, whence they were imported into England by the thousand gross. Now that machinery has been utilized in this industry the advantage of the continental manufacturers, due to their cheap manual labor, has been lost, and it is asserted by the *India-Rubber and Gutta-Percha Trades Journal* that the English factories are able to compete in both quality and price with the German-made rubber balls. Indeed, it is claimed that the coloring of the English balls is superior to the German.

THE Wyman Boordman Rubber Stamp Works, at Toledo Ohio, have been placed in the hands of P. C. Hudson as receiver.

THE BEHAVIOR OF RUBBER SPRINGS.

*By Harris Tabor.**

THE law of flexure in steel springs, and, in fact, all springs which undergo compression and extension without change of sectional area, is well-known. The shape of the spring has no influence so long as the whole spring is free,—that is, subject to flexure with out other resistance than its own elasticity. If we take the spring balance scales, an indicator spring or the old Salter spring-balance safety-valve, we find that a given resistance to such springs at any point in their free extension or compression will exert like influence; if we add, successively, equal weights to such springs, each weight will extend the spring a like amount; hence we know that the law of resistance to springs, which do not change their sectional area under tension, is arithmetical.

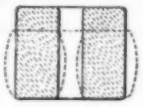


Fig. 2

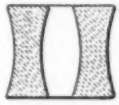


Fig. 3

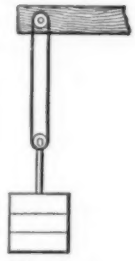


Fig. 1
American Machinist

There is a class of springs which give elasticity in the direction of extension and compression rather than flexure, and such springs change their sectional area in proportion to the tension they are subjected to. These springs are governed by a different law. Gutta percha is the best representative type of this class. If we take a stationer's ordinary rubber band and suspend by it a weight (Figure 1) it will extend a given distance, say $\frac{1}{8}$"; if we add another equal weight there will be a further extension of $1\frac{1}{8}$" instead of $\frac{1}{8}$", and, if we add the third weight it will give an increase in length of $2\frac{1}{4}$"—$3\frac{3}{8}$ the extension produced by the first weight. If a careful measurement of a section of the band had been made before the weights placed the band under tension, and similar measurements made after the weights were suspended, it would be seen that the sectional area decreased and the spring became relatively weaker in proportion to its extension, and this without reaching the limit of elasticity. In fact such a band may be extended five times its length without reaching elastic limit. When rubber is treated as a compression spring its scale increases with compression for the reason that its sectional area increases. This increase in sectional area, when the spring is compressed, is so great that a rubber spring buffer, such as are used under cars, soon becomes a solid block. Figure 2 shows a rubber spring with and without load (dotted lines show compression) and illustrates this tendency to enlarge area of section.

The theoretical rubber spring for compression would probably call for reduced middle section, enlarging towards the ends, like Figure 3. Such springs in extension would call for smaller ends enlarging towards the middle. It is possible that rubber shapes may be so proportioned that springs may be made which will scale with the same ratio that governs steel springs.

* From the *American Machinist* (New York).

RUBBER GOODS FOR RAINY-DAY WEAR.

IT may interest the trade to note the class of suggestions in relation to rubber garments made by the fashion-writers in the daily newspapers. Here is a specimen article from the New York *Times*:

Some of the new water-proof wraps are remarkably pretty and becoming. A few years ago no woman expected to look well in a waterproof. A gossamer in those days was as utilitarian a garment as any dress reformer could desire. It was strictly for use; beauty was not considered.

Now, however, while even more useful than before, it is so pretty, as well, that many women welcome a showery day as an opportunity of appearing to advantage with little trouble; a water proof wrap is capable of covering a multitude of sins in the matter of costume.

One dark-haired girl, who ought to welcome every rainy day, she is so charming in her rubber outfit, wears an ulster of cream colored rubber cloth. It is belted around the waist trimly as any gown bodice, and has a deep cape with three tiny capes at the neck. The only objection to such a garment is in its warmth. For cold, blustering winter storms these cape water-proofs are just the thing—that is, if the cape be buttoned so that it cannot go flapping over the wearer's head at every fresh attack of the wind.

For the light summer showers, when the air is warm and heavy, the nature of rubber makes it an almost unendurable material, and when it must be worn in several thicknesses its warmth is intolerable. Often the garment is as wet from perspiration within as from the rain without, in which case it invariably stains the bodice worn under it.

Too little difference is made in the designing of winter and summer waterproofs. Summer cloaks should be of the lightest weight and simplest cut, that they may be as comfortable as rubber may be made. While there is little room for improvement in the appearance of waterproof garments, there is much in this point of suitability to the seasons.

If winter garments could be made so warm as to obviate the necessity of wearing a cloth jacket beneath—which always is imperative on the colder days—and summer wraps so light that they might be worn without discomfort, the relief would be great. At present the heavy mackintosh is the best reliance for winter wear, and the light-weight English waterproof for summer.

Both these grades are expensive, as also are the silk waterproofs. What really is needed for summer is an inexpensive grade of water-proof serge or alpaca, made up with but one thickness over the shoulders. The present varieties of serge, for which water-proof qualities are claimed, are either so expensive or so unreliable as to make them scarcely worth considering.

The best way to secure a really serviceable summer waterproof is to buy the English cravenette of some reliable house and have it fashioned to meet individual need. A skirt and jacket of this, while particularly useful on many occasions, does not replace a long wrap, which so often is required for the protection of the general costume.

The silk rubber or, rather, waterproof silk suits, are handsome for those undecided days when sunshine and shower alternate. A skirt with reefer will be made to order in the rubber stores for $25 and $30 for very pretty silk. Waterproof serge, lined with surah, is offered ready-made in long cloaks from $22 upward. Among the cheap waterproofs a ribbed rubber imitating Bedford cord is pretty, especially in dark blue.

The pepper-and salt mixtures are some of the best colors in the cheap grades, though there is a new color mixture with dots and dashes of bright tints on a dark ground. These color dashes are in, rather than on, the ground, and the effect is a close imitation of the heavy winter tweed.

The imitation is so good, in fact, that the material is not pleasing for summer wear, though pretty in itself.

Of the present range of medium-priced waterproofs, the prettiest are the light grays and creams of solid color. The new "rubber velvet," which looks like cloth, and is made by sifting powdered felt over hot rubber, is light, but does not lose the disagreeable properties of the rubber. It comes in felt-cloth shades. The cheap waterproofs offered have no shape so desirable for summer, perhaps, as the Connemara front with fitted back.

Good rainy-day costumes may be made of the gray and black novelty wools at $1 a yard. Their width is 40 inches, and they come in all manner of effective weaves. For wet-weather wear in the country, unless a genuine storm is to be braved, there is nothing more serviceable than a plain gingham.

TIRE-PROTECTORS: HAVE THEY A FUTURE?

THE pneumatic tire having become a *sine qua non* to all bicycle-riders, the question of how to prevent puncture is naturally attracting the attention of inventive minds. There are many varieties of pneumatic tires, but even the makers of the best quality of tires do not claim to have entirely solved the question of puncture. The aim of all the tire-manufacturers has been to simplify repair in case of puncture, and in this great success has been attained.

Recently, however, there began to appear on the market so-called tire-protectors, designed to accomplish that which the tire-makers had virtually given up as a hopeless task. The tire-protectors were to render the tires absolutely safe against puncture, without detracting in any way from the essential merits of the pneumatic tire. The original tire-protector, it is claimed, is that patented and owned by an English company, but recently several other companies have appeared with variations on the original device. In almost all cases, the tire-protector is a band or slip made of other material than rubber, of course, and it is placed between the air-tube and the outer shoe or cover. When the tire is inflated this protecting band resists puncture as absolutely as steel would.

It is perhaps natural that the inventors and manufacturers of these protectors should be enthusiastic about their virtues and success. It is equally natural that the tire-manufacturers and bicycle-dealers should be rather skeptical and slow to welcome the new devices. Before presenting the opinions of both sides, it may be well to indicate precisely what the general objections are to the use of these foreign substances in tires. The requisites of a good pneumatic tire are great resilience and lightness. Speed depends upon this, as well as pleasure. Anything that diminishes the resilience and speed, diminishes to that extent the value of the pneumatic tire. It is these attributes which make the pneumatic superior to the ordinary cushion tire. Now, it appears to be unavoidable that the introduction of a band of other material than rubber between the cover and the air-tube should lessen the resilience of the tire and affect its speed. Another objection is cost. The addition of several dollars to the cost of a complete wheel is not welcomed by anybody if it can possibly be obviated.

A careful investigation has disclosed the fact that most of the tire-manufacturers have not given the tire-protectors any great amount of attention. They have all seen the circulars of the firms interested in the new devices and have some superficial knowledge of them; but they do not regard the subject as sufficiently important to deserve much study. The objections they urge are those just indicated, some emphasizing one and some another of the objections.

One gentleman, connected with a prominent concern, whose tires are very successful, said: "There is no future for these tire-protectors. They are not at all needed. Provided you have a tire that can easily be repaired by the rider in case of puncture, it is absurd to be bothered with the question, which has more theoretical than practical interest. One would imagine that a puncture is an every-day occurrence, while in fact it happens very seldom. Not having gone into the subject very thoroughly, I cannot say whether or not the resilience of the tire is lessened by the protector, although it would seem that it must be. But you have the very serious question of weight. Everybody is doing his utmost to make the tire as light as possible, and this protector adds from 8 to 12 ounces to the weight of the tire. This is enough in my eyes to put it out of the question."

Another gentleman who declared that he had not and would not pay any attention to the tire-protectors, said: "Assume that all the claims made in behalf of the protectors are substantially correct, the need of them has as yet to be demonstrated. The best tires now on the market do not even get deflated in case of puncture, nor is there the least trouble in repairing them; why then spend $5 and add to the weight of the tire without purpose? Tire-manufacturers are very progressive people, and they are ready to consider every new suggestion to improve the almost perfect pneumatic tires now in the field, but I am convinced the tire-protector people are working on the wrong lines."

Mr. George R. Bidwell, of the New York Tire Co., is one of the few tire-men who have given the protectors fair and close study. When he was seen on the subject he said: "Yes, we have put in protecting bands for several of our customers who

wanted to try them, and we have been interested in watching the results. In our opinion, the protectors are complete failures. They virtually mean a return to the old cushion tire. They decidedly lessen the resilience and affect the speed of the wheel. No racing cyclist would ever dream of using them. The enjoyment which the pneumatic tire gives is almost entirely taken away. There is doubtless need of some preventive of puncture, but it will have to be made of some substance that has all the qualities of rubber without the liability to puncture. The efforts to make other substances do are futile. We should not even recommend the use of protectors on carriage-wheel tires, for the comfort of the pneumatic tire largely disappears."

Mr. Bidwell stated further that this objection applied to all the varieties of the protectors that are available. He referred to the weight and cost as minor objections, and dwelt on the great objection of the lessening of the resilience and speed. No rider, in his opinion, would ever buy more than one pair of these protectors. Their inventors are unconsciously trying to revert to the cushion tire,—an attempt which must fail.

On the other hand, the people interested in the protectors claim that the facts abundantly prove the absolute correctness of their claims. Nothing but prejudice, they say, leads the tire-people to reiterate the assertion that protectors lessen resilience and slow the tires. Instead of being impossible in racing, they say, the protectors have been proved to be invaluable in racing. A certain Scotch rider is stated to have broken the 80-mile, the 100-mile, the twelve-hour, and the twenty-four-hour Scottish road records with a tire fitted with a pair of protectors of an English company. This would go to show that speed is not affected. It is also claimed that riders like the protectors from the fact that the enjoyment is greater with than without them. As to the objections of weight and cost, they say that of two evils it is wise to choose the lesser. A few ounces weight and an expenditure of $5—for the protectors last longer than the tires—are not serious obstacles to the adoption of an improvement which renders the tires absolutely unpuncturable and save annoyance, loss of time, and trouble. They are confident of success and say that after a little while the tire people will appreciate the utility of the new device. They invite all possible tests, and show interesting testimonials from people who have ridden safely over sharp-pointed 3-inch nails, glass, and anything that is fatal to an "unprotected" tire.

AN OFFICIAL VIEW OF RUBBER IN BRAZIL.

THE Baron de Marajó, who was one of the Brazilian commissioners to the World's Columbian Exposition last year, has made a report upon the rubber exhibit of Brazil to Admiral Cardovil Maurity, president of the commission, which has been placed at the disposal of THE INDIA RUBBER WORLD through the courtesy of M. F. Sesselberg, of Pará.

The Baron says that among the exhibits made at Chicago of Brazilian products the India-rubber was most important, not only on account of the extent in values of the rubber commerce, but because of the great number of interests in the world into which the gum enters. Details are given of the specimens of *Hevea* rubber shown from the states of Amazonas and Pará, and of the Mangabeira rubber (*Hancornia speciosa*) from Ceará, Alagoas, and Maranham, together with specimens from the *Manihot Glaziovii* from Ceará. But these have already appeared, with the names of the several exhibitors, in THE INDIA RUBBER WORLD of November 15, 1893, while in the December 15 issue was given a full-page illustration of the great rubber ball from Brazil.

Some of the specimens from these southern states reached Chicago in poor condition; others were very well prepared, but they failed to attract favorable attention by the side of the Pará grades. Indeed, in the opinion of the Baron, there exists nowhere a rival of the Amazon in the quality of rubber produced. But it is to the conclusions embraced in this report that it is desired to call attention:

"I wish to dwell especially," he writes, "upon what seems to me to be a most important subject. We must not be unprepared for the time—though in all probability its a distant one—when the endeavors of other countries to acclimate our *Hevea guyanensis* and *Siphonia elastica* in their territories may be successful. The country most solicitous in this respect is Great Britain. In Assam, in India, she has commenced her attempts to introduce the regular culture of *Ficus elastica*, a native of the country about. Three plantations have been created—one on the margin of the Kulsi, another in Charadur, close to the Himalaya, and the third in Burma. The plantations contain already 12,511 full-grown trees, besides 184,000 shoots. They occupy an area of 892 acres and an an order has been given to augment this area yearly."

The report proceeds to recite the experiences of Mr. Robert Cross, who traveled in Brazil and other American states preparatory to introducing the rubber-trees of the west into India, and also the work of Colonel Seaton in acclimatization of the *Hevea* rubber in Burma. While all the experiments made have not proved successful, the Baron de Marajó writes: "Without doubt the *Heveas* can be acclimated in India, and without doubt the English government is doing all in its power to make this culture regular and remunerative. Fortunately in Brazil, in the Amazon valley, the *Hevea* is commencing to be cultivated although as yet on a small scale. The state governments compete by means of repressive laws against those who devastate the rubber fields by granting awards for those who make rubber industry a fixed, instead of a nomadic culture, thus protecting our richest source of income."

By the way, the Baron urges the importance of the study of other trees and plants which flourish in Brazil, many of which might prove of commercial value. He deplores the fact that at present, in the rubber-producing states, the facility with which rubber can be obtained and the high price which it brings cause all other industries to be lost sight of. He remarked with pleasure the extent to which botanical studies are pursued in the United States, and in his report expresses regret that Brazil is not further advanced in this respect.

IN the wheat-growing districts a steady demand exists for rubber belting, for use on threshing-machines. This material is particularly suited for belting for out-door use, and it is bought in large quantities by threshing-machine manufacturers for sale with their outfits. When machine-owners need to renew the belts they resort to the hardware stores, the latter doing a large business in handling these belts in the great states west of the Mississippi. In the eastern and middle states, where the demand for belting is mainly for indoor machinery, leather is in better demand.

THE WIDE USE OF PNEUMATIC CUSHIONS.

THE pneumatic tire is not the only air-cushion that is at the present time carrying the traveler along life's highway. If one will look over the stock of any rubber store he will be surprised to find in how many instances air confined within walls of rubber is utilized. Most conspicuous among these goods is the air-mattress. To be sure, as there is a foolish prejudice against rubber in some minds, prominent manufacturers of these goods disclaim the use of rubber. But they have their goods made in rubber-mills just the same, and never try to impress rubber-men with this particular virtue of their goods. Those mattresses are largely used in hospitals, in private homes, and to a certain extent in sleeping-cars. They are certainly as comfortable if not more so than the best hair mattresses, and are disease-proof. When one ponders over the traveling millions who sleep in stale beds in hotels, sleeping-cars, and steamers, and who are open to infection from about every disease that mankind is heir to, it is a wonder that governments, in their wise paternalism, do not make it obligatory for all bed-furnishers to equip themselves with air-mattresses.

Yacht-cushions made on the same principle are now largely sold. Here they answer a double purpose. They may be easy cushions when sailing, or buoyant life-preservers when the sailing is interrupted by a sudden squall.

Carriage cushions of cloth, rubber, and air are far more generally used than is known. It is a question if their presence has not in a measure retarded the growth of the rubber-tire business,—that is, as far as carriages are concerned. Certainly the writer knows several who examined both pneumatic and solid rubber tires for their vehicles, and finally adopted rubber cushioned seats, and in no way have they repented. The manufacture of air-cushions of the kinds noted above, and indeed for a host of other purposes, forms a large business to-day. The problems of how to confine the air successfully, of the best kind of valve, etc., were about exactly what the makers of pneumatic tires had to solve when their business was young. And those manufacturers have been fully as ingenious and successful as their brethren the tire-makers.

HIS RUBBER BOOTS SAVED HIS LIFE.

A PAIR of rubber boots recently saved the life of a man named Horace W. Folger, of Cambridgeport, Mass., in the way described below by the Boston *Transcript*.

"When the storm came up on Saturday afternoon the pilot boat *Florence* was moored a quarter of a mile from Boston light. The keepers of the boat put on their oil clothing, sou'westers and rubber boots, and Mr. Folger, who is about twenty-five years old, stood on deck observing the storm, his left hand clasping the back brace, a wire cord half an inch in diameter. There had been only two flashes and no one aboard thought danger near. Then came a third, and Mr. Folger knew nothing for over an hour. The current evidently selected the highest object—the bamboo pole above the main topmast, and tore it into small pieces after it had ripped the flag off. Then the electricity came down the backstay into Folger. His rubber boots, however, offered resistance, and so part of the energy branched off in another direction. As it was, his left side caught the force of the charge. Luckily, three women were aboard, comprising a summer pleasure party, and one of them proved an expert in this emergency case. After an hour of rubbing and dosing, Folger began to show signs of life and complained of a violent headache, the sensation of seasickness, a paralyzed condition of his left side and throat, and a prickly feeling through his whole body. It was evening before he became altogether himself, and then he was taken ashore in the physician's boat *Vigilant* and carried to his home in an ambulance. It was not until Saturday night that even water passed his lips. In the meantime his left eye began to pain him intensely when he opened it, and his skin felt tough as leather. His face gradually assumed its normal color after the deep purple flush, caused by the flash, had faded. To-day he is feeling much more like himself, and there is good prospect of his speedy recovery. He says that the hour following the stroke is a blank to him."

PNEUMATIC SOLES FOR SHOES.

A WRITER in the New York *Sun* having suggested pneumatic-soled shoes for runners, football-players, and others, as a promoter of speed, a second writer says: "I do not believe it is practical. The object of a pneumatic tire on a bicycle is to so overcome the uneven surface over which it is ridden that there is no lost motion, or as little as possible. It is to equalize the surface of the ground. It is known that if a perfect surface could be secured a solid tire would be as effective as a pneumatic. When a runner puts down his foot it must secure a firm hold on the ground, and for that reason spikes are placed on the soles of his shoes. If the soles were pneumatic there would be a tendency to slip, just as a pneumatic tire will slip on a curve, where a solid tire will not. The runner does not seek to overcome unevenness in ground, as he only touches it at certain points and does not glide over it. All he wants is a firm foundation when he plants his foot."

Still another correspondent of the *Sun* says: "The records of the Patent Office show that such an idea was patented twenty-five or thirty years ago, and veterans in the rubber trade remember well enough the enthusiasm of the inventor, who wore such soles on his own shoes and tried hard to get other people to do the same. They wouldn't, he is dead, and the soles are not in the market."

DRYING APPARATUS IN A RUBBER-MILL.

THE Easthampton Rubber Thread Co. have just completed in the cutting-room of their new mill-building, a series of rooms for drying the rubber thread, which is saturated with water while being cut. There are three rooms, each 18 feet square by 8 feet high, with walls having a four-inch air space. The walls and ceiling are sheathed outside and in with narrow, beaded hard pine which is polished and shellaced. The wide doors run easily on trolley hangers and run very closely.

The drying apparatus consists of a 66-inch fan-blower run by an independent engine. The cold air is drawn through a heater containing 2000 feet of steel pipe, in five sections. One section uses the exhaust steam from the fan-engine and the other four take the exhaust from the main engine of the cutting-room. The fan, running at 400 or 500 revolutions per minute, forces the air through large galvanized iron conductors into the drying-rooms, each room having an independent damper. An outlet-pipe takes the air from the rooms into a large main that has both connection with the outer air and with the heater case, while the bulk of the moisture is being taken away. This discharge is into the outer air; it is then turned back through the heater, and so into the rooms again. The whole outfit is well designed and executed, and quite up to the high standard for which this mill is noted.—*Easthampton (Mass.) News.*

THE RUBBER-GOODS TRADE IN BROOKLYN.

WHILE there are no great rubber stores in Brooklyn, the consumption of rubber goods by the million inhabitants of that city reaches large proportions. The conditions of the trade there have undergone several changes, there being sometimes three or four exclusively rubber stores, sometimes distinct rubber departments in the great dry-goods houses, and again, as now, a general distribution of the business, through numberless channels. But all the while the demand for articles of rubber has been constantly on the increase, and to-day the Brooklynites are as well provided with opportunities for securing the latest things in rubber as are the people of any other city; and the experiences of the trade there may serve to give some profitable hints to rubber merchants located elsewhere.

One exclusively rubber store in Brooklyn has survived the vicissitudes of the trade for fifteen years past—the "Brooklyn Goodyear Rubber Depot" of T. G. Thorne, at No. 315 Fulton street. Mr. Thorne was once in charge of the store of the Goodyear's India Rubber Glove Manufacturing Co., at No. 205 Broadway, New York, going later to the same company's store at Broome street. Since beginning business for himself he has tested the merits of several locations in Brooklyn, his last removal, to a point within one block of the city hall, occurring on May 1 last. His stock embraces rubber goods of every description, and is drawn for the most part from the extensive and varied line manufactured by the Glove company. It is worth something to have been in one line of business fifteen years. While Mr. Thorne's store is small as compared with the great dry goods establishments, he says that it is quite as well known as any other business house in Brooklyn to those who need rubber goods. In many articles his trade is as large as it was before the dry-goods and drug houses began their competition, which is evidence of the growing consumption of these goods. Mr. Thorne is a firm believer in the superiority of American rubber goods over the imported, while denying that there is any advantage in respect to price for the latter. He does not keep even imported rubber toys, on account of the more satisfactory and better-lasting goods in this line made in America.

The sale of rubber articles in the dry-goods stores is large, but they no longer maintain rubber departments in charge of separate managers. The principal experiment in this line was made by the great house now owned by Abraham & Straus, in Fulton street. Their superintendent, Mr. W. Maybury Birch, said to an INDIA RUBBER WORLD representative:

"The fact that we closed our rubber department after a trial of several years is the best answer to any question as to the practicability of maintaining it. We still sell rubber goods in large amounts, but they are scattered throughout our establishment—rubber toys in the toy department, and so on. There is one objection to grouping rubber articles into a separate department in a dry-goods house that is worth mentioning. The distinctive odor of rubber manufactures is objectionable to some people, and we used to have complaints on this score from persons who didn't know the source of the odor and who would offer friendly advice about having our sanitary appliances inspected. By distributing our rubber goods all over the house we have gotten rid of this source of trouble."

In answer to the question whether rubber goods were sometimes displayed by his house as "leaders," Mr. Birch said that they were not; he knew of no articles in rubber well suited to this purpose. One early experiment in the way of offering a rubber "leader" had an amusing feature. The firm covered a "cheap counter" one day with the then new toy—a rubber dog which which was made to leap by pressure upon a small ball connected with it by a tube. The toys were no sooner exposed than a man bought one of them. He then stood at the counter pressing the rubber ball, and with every pressure a distinct loud bark was heard. Nearly every customer in the store bought a dog and had it wrapped, but it was not long before a string of dissatisfied purchasers came back, all because their dogs wouldn't bark.

"But they weren't made to bark," protested the store people.

"But they did bark," each customer insisted; "I heard them. The man who stood by the counter had one that barked many times."

The man who had caused all the trouble was the late "Harry" Kennedy, the inimitable ventriloquist, who had found in the rubber toy a new opportunity for a little harmless fun.

The sale of rubber surgical goods and druggists' sundries is an important specialty with the Bolton Drug Co., Limited, who have four stores, all in Brooklyn. At No. 456 Fulton street a separate floor is devoted to a "surgical and rubber department." As the INDIA RUBBER WORLD man entered this department a salesman was fitting rubber tips to a pair of crutches for a customer, and on every side were evidences of the importance of India-rubber in contributing to the comfort of man. The secretary of this company, J. H. Marshall, M.D., is also the president of the Wm. B. Riker & Son Co., druggists at Sixth avenue and Twenty-second street, New York. The latter establishment similarly makes a specialty of rubber goods. To return to Brooklyn, the Bolton company endeavor systematically to educate their customers in the use of rubber goods. They publish annually a handsome illustrated price-list of goods kept in stock, that for 1894 filling 76 octavo pages. It embraces pictures of a large number of rubber specialties, new and old. The firm believe that the distribution of these price-lists among families has largely increased the demand for rubber goods. According to Dr. Marshall, physicians in their practice are doing more every day to educate the people in the households they visit in the merits of rubber articles whether for the sick

or others, and the drug-stores reap a direct advantage. The Bolton company enclose within their own pamphlets the latest circulars of rubber specialties, furnished by the manufacturers. One of the large windows at the address above mentioned is generally given up to advertising some article in rubber, a change being made every week. W. C. Bolton is the president of this company and D. J. Runyon treasurer.

The hardware trade in Brooklyn is another important medium for the distribution of rubber goods. It must be remembered that Brooklyn, besides having a million inhabitants, is one of the large cities of the world territorially. Covering all of Kings county, it embraces many large gardens and innumerable residences with wide lawns, giving rise to an immense demand for rubber hose and the auxiliary articles usually sold by hardwaremen. In addition to these goods, clothes-wringers, etc., a good line of sporting goods (including some of rubber) is embraced in the stock of the Brooklyn Hardware and Sporting Goods Co , No. 601 Fulton street. They began in March last and report a good business. They handle all the sporting goods of A. G. Spalding & Co., the "Monarch," "New Mail," and other popular bicycles, and the tires of all the leading manufacturers. The new company have been successful bidders on several contracts for supplying packing, sheeting, and other rubber goods to the United States navy-yards at Brooklyn, Washington, and Boston, and also to the Brooklyn city government. H. H. Woodrough is the president of the company, J. B. Roache, treasurer, and J. A. Balestier, secretary, and all seem to be live business men.

Samuel A. Byers, a large dealer in shoes and hats at Nos. 565-567 Fulton street, keeps out a "Rubber Shoe" sign in all seasons. He handles all the leading brands of rubbers and reports that their sale forms an important feature of his business. He placed his orders for rubbers early this year, on account of the special summer discount, and expects the advantage to be gained to offset the dull trade in rubbers last winter. Every salesman in this house presents to his customers his personal card, upon which is also the address of the store. If the customer is pleased with his first visit, he is likely, upon returning, to ask for the salesman who waited upon him, with the result of building up a mutual interest between customer and employé that is in the end both pleasant and profitable.

A brother of Mr. Byers is Joseph J. Byers, inventor of the "epauletted ventilation" for rubber coats, patented in the United States, Canada, Great Britain, Belgium, France, and Austria. The inventor is now in England, where his device for affording a vent for the moisture from perspiration is much appreciated as an addition to rubber coats of any style. Charles Macintosh & Co., Limited, are said to have taken much interest in this feature, which has proved profitable to the inventor, he being entitled to a royalty for every garment to which his invention is applied. Mr. Byers of Brooklyn has sold a large number of such coats to the police and the district messengers.

The Columbia bicycle people have an agency at No. 555 Fulton street, under the management of S. F. Frasick, and a good display of wheels is to be seen there.

There are rubber goods to be seen in all the toy stores. One of these, started by the late Joseph Schwartz, is still maintained by his widow at No. 465 Fulton street.

Brooklyn is noted for the number of its bicyclists, of both sexes, but as yet rubber tires for other than bicycle-wheels have not made their appearance. Few cabs are to be seen on the streets, and they are not rubber-tired, as on Broadway. Nor have rubber tires been introduced on the ambulances.

This article is not meant to be a complete résumé of the rubber trade in Brooklyn, but merely to indicate some typical features which may prove of interest in rubber circles elsewhere. If it be taken into consideration that Brooklyn is a rubber-manufacturing city,—it is the site of the plants of the Gutta-Percha and Rubber Manufacturing Co., the Ideal Rubber Co., and several other concerns,—it will be apparent that the city deserves to rank much more prominently in connection with the rubber trade than it apparently does in the minds of most people.

SOME FEATURES OF THE PARÁ RUBBER TRADE.

THE labor question will afford the coming problem in the Amazonian Rubber industry, according to Mr. R. F. Sears, the head of the Pará rubber-exporting house of Sears & Co., who was lately in New York. The average annual increase in the rubber output at Pará, he says, has been for some time past 6 per cent., but the rate of increase for the year ending June 30 last was only about 3 per cent., while the crop for the year just begun will probably show no increase. "The production might just as well be five times as large," Mr. Sears asserts, "if the labor supply were only sufficient." But instead of an increase, he looks for a falling off in the available labor, for some time at least. Only those born on the soil can work in the region of the equator, and this narrows the rubber-gathering forces in the Amazon valley to the native Indians. Their number is not now great—considering the extent of the country—and, in the opinion of Mr. Sears, it is constantly decreasing. Meanwhile no other class is preparing to take the place of the Indians, whose fate must inevitably be that of the North American Indians in the face of advancing civilization. Mr. Sears has no confidence in the success of the attempt to colonize Chinese laborers in the rubber country.

In the year 1886 a long period of severe drought began in the State of Ceará, which lies on the Atlantic coast south of Pará, the result of which was to force many of the people away from their homes in search of employment. They found their way, for the most part, to the Amazon valley, where they became rubber-gatherers. But now that conditions have improved in Ceará, and substantial advancement is being made in that state, the Cearaense are returning to their homes, leaving a gap in the labor-supply along the Amazon that none of the people of the south Brazilian states can fill, on account of climatic reasons, if for no other.

In recent years there has been a great improvement in the methods of the rubber trade. As Mr. Sears expresses it, they

have been conforming to American ideas of doing business. In 1882, at Pará, he disbursed $1,200,000 in advances to rubber-collectors, on "blanket mortgages" covering, in many cases, rubber that had not then been gathered. Gradually this method has been abandoned until now the same house makes no advances except on rubber in sight—which means, generally, rubber upstream afloat for Pará. Formerly the accounts with these rubber-collectors were never closed. They ordered from Pará such goods as they wanted, on the promise to send their next rubber crop, but a period of liquidation seldom came. The new method is of course much more satisfactory to the Pará merchants, and it is putting the whole trade upon a better basis and leading to more system in the business.

In addition to the adoption of American methods, Mr. Sears reports a steady gain in the direct trade between Pará and the United States. For some years past the larger share of the Pará rubber output has been consumed in the United States, and now many products of our country are going to the Amazon valley in larger volume than ever before. This is true particularly of cotton piece-goods, prints, hardware, kerosene, flour, and beef. American manufacturers have been studying the wants of the Amazonian people more closely, and their products are making a good reputation among buyers of every class.

* * *

THE rubber production of Bolivia has been studied with interest by Mr. Sears, whose house handles a liberal share of the rubber reaching Pará from that country. The only outlet now for this rubber is through the Madeira river, with its long series of falls,* making transportation slow and expensive. Rubber from the Beni river, which merges into the Madeira above the falls, is sometimes three or four months in reaching Pará. This delay, however, is not without its advantages. It gives the rubber an opportunity to become well dried before reaching the market, for which reason it brings uniformly good prices, the quality of the Bolivian rubber being, in the first place, of the very best. During Mr. Sears' first year at Pará (about 1880) the Bolivian rubber received there amounted to 100 tons, whereas last year it had increased to 700 tons. Undoubtedly the completion of the Madeira Falls railway, once undertaken, would have been followed by a great development of the rubber industry of Bolivia. Mr. Sears reports that the natives there are of a higher order of intelligence than those of Brazil, and that the work of rubber-gathering is more carefully performed. The rubber-shippers on the Beni are more business like in their methods, too. Mr. Sears says that he has never been asked to make an advance on a lot of Bolivian rubber; on the contrary, the shippers often have good-sized balances to their credit with their factors in Pará.

The Peruvian rubber supply reaching Pará has not increased in the same ratio as the receipts from Bolivia. The rubber is not so well cured, the greater part of it being coagulated without smoking.

*See map and descriptive article on the rubber of Peru and Bolivia in THE INDIA RUBBER WORLD, September 15, 1893.

RANDOM NOTES FROM PARA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The fourth of July was celebrated by the foreign colony in Pará in a most enjoyable way. Mr. R. F. Sears, an esteemed and popular former Pará merchant, gave a delightful river-picnic on one of the Amazon Company's steamers, which was gaily decorated for the occasion. Some exclusive Brazilian families were also present. The steamer went some distance up and down the river. Dancing and music ("Yankee Doodle" being repeated several times) were the order of the evening. Champagne "flowed like water," and the lunch was magnificent.

To commemorate the anniversary of the independence of the United States, the governor of the State of Pará on July 4 laid the foundation of the Pará Institute of Mechanical Arts in the presence of a great concourse of people, including representatives of many corporations. The scene of this demonstration was at the pretty suburb of Braganca, where the institute is to be erected, and to which place special trains were run. The North American pavilion was festooned with the flags of Brazil and the United States. The ceremonies were followed by an elaborate banquet. The governor, Dr. Lauro Sodre, made an address which was followed by one by the United States consul, Mr. Mathews, their remarks being characterized by expressions of mutual good will between the two republics.

Manáos seems still to be getting ahead. The beautiful new theater there has been completed, and it is reported that another bank—the Banco do Amazonas—is to be opened soon, with about $1,000,000 capital. The Banco do Manáos, with good capital, is already doing well there.

The receipts of rubber at Manáos during June amounted to 145,335 pounds, the shipments being derived from the following streams:

	Pounds.
From the Javary	68,644
From the Juruá	27,309
From the Madeira	15,628
From the Negro	13,525
From the Purús	11,486
From the Solimoes	8,743
Total	145,335

The pretty little town of Cametá, on the Tocantins, seems to begin to awake from its half-dead state. New houses are being built and the restoration of the village church is completed. To commemorate the latter the inhabitants are going to have a three-days *festa*. "All work and no play," they emphatically believe, "makes Jack a dull boy."

On June 8 was opened the extension of the line of railway from the important suburb of Benevides, to that of Bemfica. An enthusiastic *festa* attended the occasion. The new locomotive of the train (which was filled with ladies and gentlemen) being gaily decorated with American and Brazilian flags. Fireworks (without which no Brazilian *festa* can be complete) and a sumptuous lunch followed. A droll little incident occurred which, however, really frightened no one. Arriving at Bemfica a gentleman went to the lunch compartment of the train, to look after the barrel of ice (covered in sawdust) and other provisions. In a corner of the compartment, partly hidden by boxes and kindling wood, lay coiled up an enormous *giboa* (boa constrictor) which had escaped observation in the early morning. He seemed to be suffering from a fit of indigestion (was probably gorged with rats), and he required several severe taps to be roused from his torpor. He was secured finally, by a native who placed him in a box to take to town. Like the dog of railway fame, in the United States, he "liked riding in the cars."

There is a steady increase in the shipment of rubber direct from Amazon-valley ports. There was lately shipped a good quantity of rubber direct to England, by the English steamer *Lisbonese*, from Itacoatiára, in the state of Amazonas.

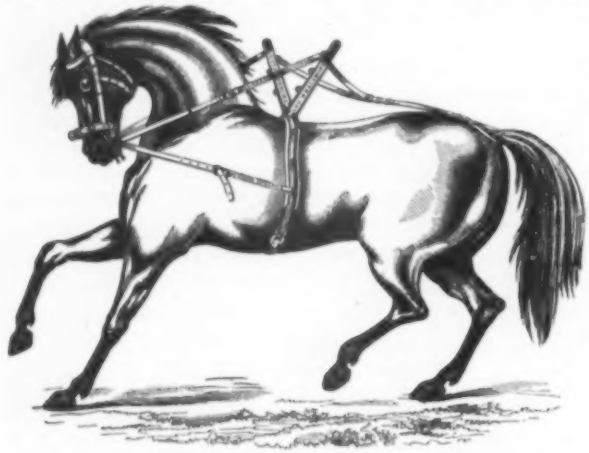
The receipts of revenus at the Pará custom-house during May reached the large sum of $3,621,678.60. GRAO PARÁ.

Pará, Brazil, July 6, 1894.

MADAGASCAR rubber pays an export duty of 12 francs per 100 pounds at the present time.

GUTTA-PERCHA AND INDIA-RUBBER IN HORSE-BREAKING.

IN the United States, in years past, much of the horse-breaking has partaken of the rough-and-tumble methods of the western "broncho-busters." During the last few years, however, there has been a radical change for the better in this business, and breakers and trainers are using more tact, improved appliances, and greater patience, in place of mere brute force. An English invention that has come to be looked upon as a necessity in breaking spirited colts, is what is known as the dumb jockey. It consists simply of a strong circingle, from the upper part of which spring two horns, made of whalebone and gutta-percha. A line runs from each of these to the bit. Mid-



way in these lines is a rubber strap, that always acts as a spring. Another line runs from the bit on each side, that has its rubber spring also, and can be attached to the circingle at three different points, for which rings are provided. A strong back-strap and crupper complete the outfit. When once this is fitted to a colt, he is powerless to throw it off, nor can he, however he chafes, rears or plunges, hurt himself in the least. On the contrary the rubber springs give to his every movement, and still teach their lesson every minute. A half hour a day of this dumb jockey's training soon brings the most high spirited colt to terms. It is said that more than 5000 of these appliances are in use among English horse-owners.

A CEMENT FOR A DRY HEAT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I want a compound for making cement and would like to have it as near pure gum as possible. It is to be used in a dry steam heater and must dry very quickly. Please let me know what degree of heat it will need. Very truly, L. H. W.

Boston, Aug. 12, 1893.

[As writer is employed in a rubber shoe factory it is probable that the heats that he has access to are the regular boot and shoe heats. The easy way for him to get a cement for experimental purposes is to purchase it ready made, say of the Boston Rubber Cement Co. He can then add a little litharge to make it dry more quickly, if necessary, or enough sulphur to effect the vulcanization. If however he chooses to make it himself, pure gum dissolved in naphtha, litharge and sulphur are all that is needed. The amount of sulphur and litharge depend upon the use to which the cement is to be put, and whether it is likely to be placed where it will make the goods bloom.—THE EDITOR.]

BETTER NOT TRY TO VULCANIZE PATCHES.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Will you kindly tell me how a patch may be vulcanized on to the outside of a bicycle tire.

Very truly, EDWARD W. BRIDGMAN.

Buffalo, N. Y., Aug. 18, 1894.

[The only way to *vulcanize* a patch on a tire is to take it to a rubber factory and get them to do it. Are you sure, however, that you want it vulcanized? If it sticks and wears well is not that all you want? A gutta percha cement is probably what you want, and that requires heating only. Some, to be sure, run friction tape around a tire, and around the rim also, but it does not make a very neat looking job.—THE EDITOR.]

YOU ARE WELCOME.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Allow me to express my thanks for the article in the July number on the Life Saving Jacket. I have had several inquiries concerning it resulting from your remarks. The need of such a garment becomes more apparent each day, and the fact that the disposition of the rope in the lining of the coat follows nature's own plan as shown by that of the spider, makes our claim the more emphatic as a practical life saving apparatus.

Very truly, CHARLES T. WOOD.

Boston, Aug. 8, 1894.

HE ASKS TOO MUCH.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Will you kindly send me the names of all the rubber-manufacturers and wholesale dealers in rubber goods in the United States, as I wish to get a complete list and do not know of any other way to obtain them but from you. Hoping that I am not asking too much, but may be able to return the favor later on.

J. H. W. POPE.

St. John, N B., June 22, 1894.

[THE only list that we have of rubber-manufacturers and rubber dealers in the United States is one that is used as our subscription- and mailing-list. That runs up into the thousands of names, and its first gathering and many revisions make it a costly piece of property; realizing this, we are sure our correspondent will hardly expect us to present it to him. We would suggest that if he is in any way trying to get before the manufacturers and dealers in rubber goods in the United States that the cheapest way, instead of gathering a costly list and sending out circulars and letters, is to place a card in THE INDIA RUBBER WORLD.—THE EDITOR.]

OUR PAPER READ IN THE ANTIPODES.

TO THE EDITOR OF THE INDIA RUBBER WORLD: It may be some satisfaction to you to know how closely your paper is read in foreign countries, even at the antipodes. A responsible dealer doing a large business in Australia has just sent us a considerable order for "Nathan's Over-boots" described in one of your recent numbers, and directly attributes the order to the reading of your article. Truly yours,

GEO. WATKINSON.

Providence, R. I., June 18, 1894.

RUBBER-PLANTING IN COSTA RICA.

THE government of Costa Rica, which has always exhibited much prudence and far-sightedness, realizing that the natural supply of rubber cannot last for ever, some years ago attempted to stimulate the cultivation of the tree by offering prizes for the best artificial forests. The first prize of $5000 was given to Dr. Valverde, who has a plantation near Port Limon, Costa Rica, of between 25,000 and 30,000 trees, which will be ready for tapping next year. The second prize was taken by Mr. Minor C. Keith, a Brooklyn gentleman who manages the principal railroad of the country. He planted about 25,000 trees, and they are all in a flourishing condition. It is believed that the success of these gentlemen will stimulate others to follow their example, and result in adding another industry to the resources of Costa Rica. The planting was done from seed, in a banana grove, the shade of the latter trees protecting the plants from the heat of the sun until they became independent of their assistance.—*Chicago Record.*

RUBBER-PRODUCTION OF ECUADOR.

THE British foreign office has printed a consular report on the trade of Guayaquil, Ecuador, for 1893, which includes some facts respecting India-rubber. "Nearly every important product," says the consul, "shows a large increase on the quantity exported the year previous, with the exception of India-rubber. The trade in this article is slowly declining, and the cause of it is the reckless manner in which whole groves of these valuable trees are cut down." These comparative figures are given of the exports of India-rubber from Guayaquil:

	1892.	1893.
To United States.....pounds	440,200	380,300
To other countries	23,300	12,600
Total	463,500	392,900

These shipments represent about half the total exportation of India-rubber from Ecuador, as shown by the following figures for 1893, from the same report:

	Pounds.
From Guayaquil	392,900
From other ports	477,700
Total from Ecuador	870,600

The value of the last given total is stated at £39 177.

These figures it will be understood, are those of the Ecuadorian custom-houses, and cover the calendar year 1893. It may be of interest to give the United States treasury returns of India-rubber imports from Ecuador for fiscal years:

	Pounds.
Ending June 30, 1890	508,410
Ending June 30, 1891	715,430
Ending June 30, 1892	887,642
Ending June 30, 1893	828,865

The latter figures are not presented as having any bearing upon the rubber-production of Ecuador, but only to show the amount of India-rubber reaching the United States from that country.

THE principal demand for rubber belting in the far east comes from Japan, the most advanced of the oriental nations. Several large paper-mills exist there, all using machinery of American manufacture, operated by men who learned the industry at Holyoke and elsewhere in the United States. Their mill-supplies come almost wholly from this country, although England has the advantage with respect to steamship-lines and resident English merchants and bankers. The rubber belting required for these mills amounts to a pretty item in the course of a year or two.

EDWARD W. HARRAL.

THE president of the Fairfield Rubber Co., Mr. Edward W. Harral, was born in North Bridgeport, Conn., being descended from one of the oldest and most respected families in that region. He married early in life, and his family consists of wife and two children. At present he lives in Fairfield, where his factory is located, but he still has large interests in Bridgeport. Most of his time is spent at the Fairfield factory, which is his pet business project. Since leaving school he has been in active business constantly, and it is probable that he is as well known in the carriage trade as any man in his line of business. He is about fifty years of age, but in appearance is much younger, and he is noted far and wide as being one of the most genial and approachable of men. His chief recreation is fishing, and during the summer months he spends as much time as possible on the water, and has the name of being one of the most expert fishermen in his region.

No one who rides on the New York, New Haven and Hartford railroad can help noticing Mr. Harral's plant. It is exceeding neat to begin with, and always looks thrifty and busy. It is close to the railroad, and its ample lawn supports handsome signs telling what the factory makes. That those signs may be read, there is set in the middle of the row a large painting, representing a group of rustics mounting a stone-wall and waving hats at a train that is passing. The train of course is not shown, but the attitudes are so real that one knows instantly what they are supposed to be doing.

The company of which Mr. Harral is the head is engaged largely in the manufacture of carriage cloth, and his interest in the carriage trade has led to his becoming a prominent figure at the meetings of the Carriage Builders' National Association. The portrait of Mr. Harral on this page is presented through the courtesy of the *Carriage Monthly*, of Philadelphia.

TEA-PLANTING AND RUBBER.

THERE are some facts in relation to tea-planting under British auspices in India and Ceylon not without interest to those who are giving attention to the subject of cultivating rubber-trees. The consumption of tea in Great Britain, in pounds is thus stated by the London *Times*:

	1881.	1893.
From China	112,000,000	36,000,000
From India and Ceylon	48,000,000	172,000,000
Total	160,000,000	208,000,000

At this rate the consumption of Chinese tea in Great Britain bids fair to come to an end. Indeed, it is the boast of some Englishmen that in the end their whole tea supply will be brought from the English plantations in the far east, despite the utmost efforts of the Chinese to retain a market which once was theirs entirely.

The point to interest rubber-men is the great success that has attended a branch of agriculture—if tea-planting may be so styled—which might be repeated in the case of rubber-trees with the same energy and persistence applied. There is no reason to doubt, if the British government should ever foster rubber-tree planting with equal determination, that as in the case of tea, the world's consumption of the product would be increased, and that the cost would be greatly decreased, and made less liable to fluctuations.

PRICE-LIST OF RUBBER-TREE SEEDS.

A PRICE-LIST of tropical seeds and plants, issued by J. P. William & Brothers, of Heneratgoda, Ceylon, relates to a large variety of products, including India-rubber. It may be of interest to INDIA RUBBER WORLD readers to quote from the catalogue:

HEVEA BRASILIENSIS.

(*Celebrated Pará Rubber.*)

Well-ripened seeds £1 per hundred post free, per steamer.

1,000 seeds		£5
2,000 "		4 10s. per thousand.
5,000 "	and over at	4 "

Plants of same for short voyages £8 per cloth covered case of hundred plants, for long voyages £10 per Wardian case of hundred plants.

MANIHOT GLAZIOVII.

(*Ceará Rubber.*)

Selected seed £1 per thousand post free, per steamer.

5,000 seeds		at shillings	15 per thousand.
10,000 "		"	13 "
20,000 "		"	10 "
30,000 "		"	7 "
40,000 "	and over	"	5 "

The catalogue referred to contains numerous letters from customers of the firm, some of whom mention purchases of rubber-tree seeds, including the Royal Niger Co., who ordered from London a consignment of Ceará-rubber seeds for planting in the Niger territories, in Africa.

ENGLISH RUBBER FACTORIES.

THE firm of F. Reddaway & Co., Limited (London and Manchester), have acquired the business of the Sphincter Hose and Engineering Co., lately doing business at Emerson street, Southwark, London, S. E. The founder and general manager of the latter company, F. M. Hale, is not included in the consolidation, but has formed a new business, based upon his patents for a new method of armoring hose. The new concern is the F. Marten, Hale & Co., Limited, with £10,000 capital, occupying the premises used by the late Sphincter Hose Company. Mr. Hale will be the managing director.

The Lancashire and Yorkshire Waterproof Garment Co., of Cornbrook, Manchester, has been dissolved by the retirement of John Charles Milne. The business will be continued, however, under the same title, by Norman Knowles, as sole proprietor.

James Bertram & Son, Limited, of Edinburgh, have been shipping a good order of India-rubber machinery to St. Petersburg, for the Russian-American India-Rubber Co. They make a double-screw press for turning out rubber sheet 17×4½ feet.

The items above have been condensed from the *India Rubber Journal*, of London.

REPORTS OF RUBBER COMPANIES.

THE American Rubber Co. of Boston have made the returns to the secretary of state of Massachusetts required under the corporation laws of that commonwealth, the figures being based upon the condition of business at the date of their last annual meeting—May 31, 1894. The details follow:

ASSETS.		LIABILITIES.	
Land and water-power	$ 37,287	Capital stock	$1,000,000
Buildings	145,000	Debts	257,746
Machinery	125,000	Profit and loss	343,667
Cash and debts receivable	511,121	Reserve for depreciation	229 546
Manufactures and merchandise	1,008,926		
Miscellaneous	3,626		
Total	$1,830,960	Total	$1,830,960

The Columbia Rubber Co. of Boston have recently filed in the office of the secretary of state the returns presented at their annual meeting of February 13, 1894, as follows:

ASSETS.		LIABILITIES.	
Machinery	$19,440	Capital stock	$25,000
Cash and debts receivable	46,126	Debts	42,764
Manufactures and merchandise	70,181	Reserves	30,000
		Profit and loss	37,983
Total	$135,747	Total	$135,747

ADULTERATION IN THE TIRE BUSINESS.

"A DEPLORABLE tendency in the pneumatic-tire branch of the rubber industry," said a representative of a prominent tire-manufacturing company, "is that toward adulteration and the use of cheaper rubber in making the outside shoes of the tires. So far the inner tubes of the tires, with perhaps one or two exceptions, have been made of a high quality of rubber, but no such strictness has been considered necessary in the making of the cover. Indeed some pretend that it is a decided advantage to have the outside shoe made of a poorer compound. The fact is that there is no such distinction at all. It is merely the desire for cheapness, the stress of keen competition, that prompts tire-manufacturers to use poor rubber where it is not absolutely unsafe to do so. But the policy is short-sighted. The result will be that all tire-manufacturers will be forced to use cheaper rubber for the outside shoe, and the reputation of the trade will suffer. Those who want to gain an advantage by offering a cheaper tire will not benefit by it for any length of time. So far the most prominent tire-manufacturers have resisted the tendency, but they may yield to it sooner or later, and the rubber trade will be injured by it. Cheaper production by all means, but don't resort to adulteration."

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 523,031.—Pneumatic Tire. Robert S. Anderson, Toronto, Canada, assignor of one-fourth to John Thomas Beatty, same place.

In a pneumatic tire for bicycles and wheels, the combination with the tire, tube and rim, of a wire coil consisting of a plurality of convolutions secured in each edge of the tire and held normally in place upon the rim by the pressure of the tube when inflated but allowable of extension upon the air pressure being removed from the tube and having the ends extending out in opposite directions through a hole outside of the edge of the tire and tabs secured on the terminals of such ends.

No. 523,051.—Vehicle-Wheel. Newton D. Pennoyer, Fort Worth, Texas.

The herein described vehicle wheel consisting essentially of the following elements in combination, viz.: an elastic tire having shoulders and inwardly extending parallel branches, a felly formed by a single piece of metal bent into U-shape and adapted to receive the branches and having its side walls flared outwardly and curved to seat the body portion of the tire, and also having its edges flanged to engage the shoulders of the tire, the transverse bolts taking through the side walls of the felly and the branches of the tire, and adapted to clamp or bind the felly against the tire, and the spokes let into the inner portion of the felly.

No. 523,270.—Pneumatic Tire. John B Dunlop, Sr., and John B. Dunlop, Jr., Dublin, Ireland; said Dunlop, Jr. assignor to said Dunlop, Sr.

In a pneumatic tire, a jacket of textile fabric having longitudinal threads which extend circumferentially round the tire and transverse threads extending across the tire, the longitudinal threads at the tread portion thereof being stronger or closer and stronger than the circumferential threads at the sides of the tire and the transverse threads which extend across the tire.

No. 523,282.—Pneumatic Tire. Thomas B. Jeffery, Chicago, Ill.

In combination with the rim, the tire cover having its edges infolded and provided respectively with shoulders by which it hangs on the rim and with ribs projecting outward from the periphery of the rim at the corners of the latter to bound a recess between them; the clamping shoe having wings which occupy the cavities in the droop of the cover, and a web which extends across the recess between the ribs and the inflatable core located within the cover and outside the shoe adapted by expansion to press upon the web of the shoe to sink it into the depression between the ribs of the cover.

No. 523,314.—Wheel-Tire. Thomas B. Jeffery, Chicago, Ill., assignor to the Gormully & Jeffery Manufacturing Company, same place.

In an inflatable tire, the inflatable core therein having joined to its inner periphery a band or ring whose exterior circumference is normally less than the normal interior circumference of the core, whereby the core may be contracted or compressed.

No. 523,443.—Device for Inflating Pneumatic Tires. Robert H. Rice, Fremont, Ohio.

The combination with a frame, revoluble wheel and pneumatic tire, of a flexible compression chamber communicating with the tire, a compressor frame partially surrounding the compression chamber, a movable trolley frame and trolley, means for operating the trolley frame and means for limiting its movement.

No. 523,283.—Pneumatic Tire. Thomas B. Jeffery, Chicago, Ill.

In combination with the rim and the inflatable core, the cover folded about the rim and having its lateral portions lapping each other at the inner circumference, the overlap extending entirely across the periphery of the rim and overhanging both sides, the inner of such overlapping portions having thickened ribs which extend outwardly in the plane of the wheel at both sides of the core, whereby the inflation of the core operating against the thickened portions crowds them outwardly, and causes the portions to press inwardly against the sides of the rim.

No. 523,365.—Pneumatic Tire. George C. Moore, Easthampton, Mass.

The shoe or cover for pneumatic tires consisting of a tubular lining or foundation fabric and an elastic covering or surfacing, the lining having one end thereof inserted into the other to form a lap-joint extending entirely around the shoe or cover and secured therein except at the inner side, where such ends in addition to being overlapped, are left disconnected from each other to permit of the insertion of the air-tube.

No. 523,831.—Bicycle-Wheel. George H. Chinnock, New York, N. Y.

The combination with the rim of a wheel, of a spring band divided into segments which are joined end to end, with overlapping portions, an inflatable tube located around the segments, a slotted cover surrounding the tube, and having notches in the edges thereof, bolts, having tapered portions, which pass through the segments and the rim, and located at and in the notches, and having grooves in which the edges of the segments are sprung.

No. 523,947.—Pneumatic Wheel-tire. Edward H. Seddon, Sale, England.

A coupling device for the ends of a wire attaching a tire cover to a rim, said device consisting of a stretcher of S shaped section hinged to the wire end and having the other wire end hooked upon its other end and in such a manner that when the stretcher is pressed down upon the wire end this lies in the bottom groove and the other wire end in the top groove of the stretcher.

No. 524,105.—Pneumatic Tire. Henry J. Doughty, Providence, R. I.

In a pneumatic tire, an inflatable inner tube, and a surrounding jacketing strip having its separable longitudinal edges overlapped outside the tube, combined with a detachable concavo-convex tread, and a locking device intermediate the tread and jacketing strip to connect the tread and strip at opposite sides of the overlapped edges of the strip.

No. 524,272.—Bicycle-Tire. John D. Beebe, Columbus, Ohio, assignor to the Beebe Tire Mfg. Co., Portland, Me.

A bicycle tire composed of a rubber tube, having concentric wire springs embedded in it, formed independently of each other, having lateral extension, each increasing in width from its inner to its outer edge, and each composed of a series of lateral loops which are dodged and passed by each other in the completed tire.

No. 524,287.—Pneumatic Bicycle-Tire. Peter Krumschied, Boston, Mass., assignor of one-half to Philip J. Duggan, same place.

In a bicycle tire, the combination of an envelope, the edges of which are formed of thin flexible material, wound over and over on a wire core, the wire core being formed of wire bent as described so as to form a tape like strip, the edges of which constitute a straight, continuous, and rigid support for the over wound thin fabric; with a rim having recesses as described.

MECHANICAL GOODS.

No. 523,012.—Metal Driving-Belt. Henry Sewrey, Barrie, Canada.

As a driving belt, a band of metal having a facing of cotton or other webbing cemented thereto, the webbing having a layer of rubber applied to the face coming in contact with the pulley, in combination with fingers projecting from the metal band and turned over the facing.

No. 523,317.—Emery-Wheel Attachment. William E. McGennis, Scranton, Pa.

The herein-described grinding attachment for sewing-machines the same consisting of an annular disk the periphery of which is provided with a grinding coating composed of emery-dust and an adhesive mixture, the disk being provided with an annular recess the annular wall of which is lined with rubber and is adapted to take over and lock by friction upon the fly-wheel of a sewing-machine.

No. 523,941.—Combined Sprayer and Nozzle. Franklin S North and Adelbert Raymond, Detroit, Mich.

In a device for the purpose set forth, the combination of the shell provided with an induct port and a valve aperture communicating therewith, the aperture having a conical outer opening, the wall of which is slightly concaved, the threaded stem passing through the valve aperture, and having the lateral wings that engage the side thereof, the stem screwing into the wall of the case, and the cone valve on the stem, filling the conical opening.

No. 524,162.—Sheet Packing. Albert P. Cochrane, St. Louis, Mo.

As a new article of manufacture, a sheet packing which is composed of exposed layers of rubber of different compositions which are adhered to each other, one or more of the layers being of such nature as to become hard and remain hard or vulcanized under the action of heat, and the other layer or layers being of such nature as to remain in their normal state of softness or pliability.

No. 524,178.—Packing. Norman B. Miller, Philadelphia, Pa., assignor to Charles A. Daniels, same place.

The combination in a packing, of the wedge-shaped sections, the inclined surfaces of each section adjoining, with an absorbent cushion confined in a braided casing and situated back of one of the sections, the whole combined in an outer casing.

DRUGGISTS' SUNDRIES.

No. 523,345.—Syringe. James Hardman, Jr., Belleville, N. J.

In a syringe or atomizer, a valve comprising therein a shell, a valve chamber provided with a "necking" forming a valve seat, a valve on the seat, and a wire loop having the ends thereof in engagement with an annular recess to prevent the displacement of the valve from the valve chamber.

No. 524,159.—Stopper or Cover for the Mouths of Bottles. Theodore B. Birnbaum, London, England.

A covering for the mouths of bottles and the like, having in combination a continuous body of thin elastic rubber shaped as a cap and normally having a rounded contour, the same being of uniform thickness throughout and having a bead or less flexible edge at its open end, a ring formed integrally with the cap at its closed end, a cord extending from the ring, and an elastic ring attached to the cord.

INSULATED WIRE.

No. 524,068.—Waterproof Insulated Electric Conductor. Duncan Macfarlan, Philadelphia, Pa.

A water and fire-proof insulated electric conductor having a cord or thread of fire-proof material saturated with an insulating substance wound around the same and with an outer rubber cloth covering.

HARD RUBBER.

No. 523,065.—Comb. Joseph W. Howlett, Milton, Pa.

A comb composed of a metallic core or frame consisting of a back-piece having integral end and intermediate teeth and provided with perforations, and a plastic covering extending entirely over the metallic frame and united through the perforations and vulcanized thereon.

TRADE-MARK.

No. 25,090.—Boots, Shoes, Overshoes, Slippers, and Rubbers Edward H. Noble, Boston, Mass. Filed June 26, 1894.

Essential feature.—The word "Walkeasy." Used since September 3, 1891.

MISCELLANEOUS.

No 523,058.—Brush. Willy Wallach, Paris, France.

A brush consisting of a molded tube of plastic material, a hard bristle holding portion inclosed within the tube and to which the bristles are attached, a stem, a sleeve connecting the stem with the bristle holding portion, and a filling inserted into the tube about the stem.

No. 523,508.—Boxing-Glove. Otto A. Burton, Atlanta, Ga.

A boxing-glove, having a part of its surface removed and provided, within the removed part, with a flexible cup having an opening in its outer end, and also having an opening in its inner end, washers, covering the opening in the inner end of the cup, means, extending through the last named opening and washers, for securing the cup removably to the glove, and a compressible device in the cup designed to contain a marking fluid or substance.

No 524,158.—Slate Cleaner and Drier. Richard B. Berk, Dayton, Ohio, assignor of one-half to Gustav Modler, same place.

A slate cleanser and drier consisting of a cylinder open at both ends, and provided with perforations in its sides, in combination with a flexible reservoir inserted in the cylinder, adapted to contain water, and to be compressed through the perforations in the cylinder, absorbent material attached to one end of the cylinder adapted to receive water from the reservoir when the latter is compressed, and a drying substance attached to the other end of the cylinder.

No. 524,236.—Harness or Other Strap. William W. Bays, Rome, Ga.

The combination of a rubber strap, rings or frames secured thereto, straps secured to the rings or frames, and an inelastic strap-loop loosely passing through the rings or frames and adjustably secured together at its ends, the inelastic strap loop lying on both sides of the rubber strap, but wholly disconnected therefrom.

THE shoe-trade journals are printing essays under the heading "If I had $3000, How I would Start a Retail Shoe Store." Mark C. Bostwick, of Alpena, Mich., writing on this subject in the *Boot and Shoe Recorder*, says: "We must purchase rubber stock to the amount of $600, consisting of men's rubber boots, ladies', gentlemen's, boys' and youths' and misses' rubbers in full sizes, no halves as yet, because stock is too small, but all we can afford."

* * *

THE newspapers of August 24, reported the loss of sight by Lyman Parks, aged twenty, of Jeffersonville, Ind., through the explosion of the pneumatic tire of his bicycle, while it was being inflated. Fragments of the tire struck him in both eyes.

* * *

THE activity of English inventors in the matter of pneumatic tires may be appreciated from a study of the list of applications for letters patent printed in a single month's issue of our London contemporary. To use the descriptive titles there given, the subjects of patents are as follows: Pneumatic tires, 24; tires, 10; tires and rims, 5; covers for tires, 7; valves for pneumatic tires, 2; pneumatic cycle saddle, rim for pneumatic tires, air-cushion for tires, elastic tired wheels, band of tread, valve tires, pneumatic pump, and inflator, 1 each; total, 56 patents applied for.

ONLY

A Little Rubber

ON YOUR FEET ON DAMP DAYS.

Trade Marked and Patented.

This **VETO** COVERS LITTLE,

And yet—

It is often

Protection Enough

FOR SPRING, SUMMER AND FALL.

Manufactured only by the

BOSTON RUBBER SHOE COMPANY,

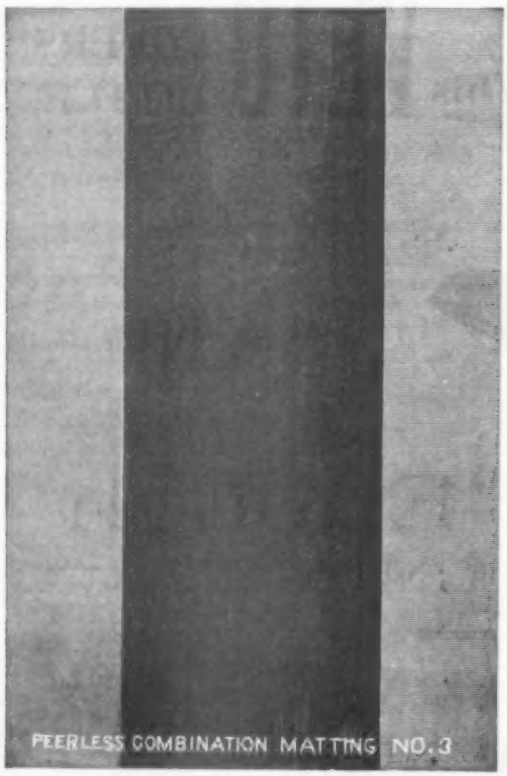
Because they know how.

NEW GOODS AND SPECIALTIES.

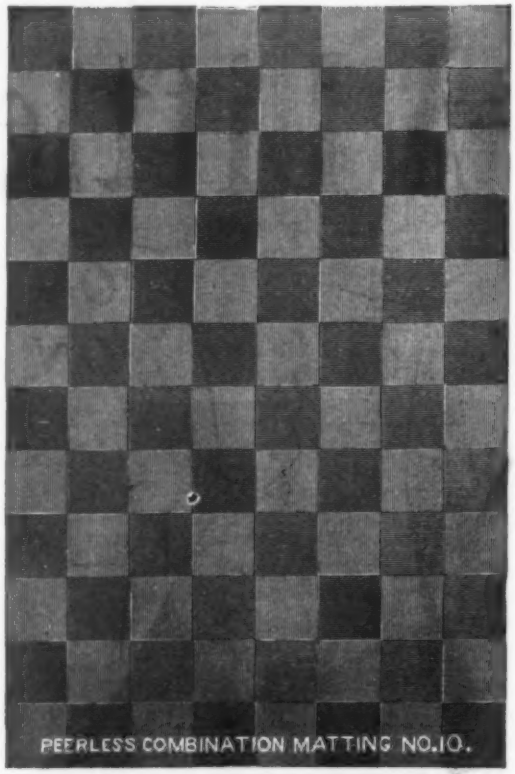
MR. DAVID HALE, of Boston, the well-known rubber-man, recently called the attention of a representative of THE INDIA RUBBER WORLD to an invention for which he predicted great things. It seems that in the past the thinner skivings of leather have been of no use in many places, because of their tendency to tear. A bright inventor, however, has overcome this by reinforcing the skivings by fine cloth, securely fixed to the leather by a quick-drying rubber cement. By this means the thinnest of skivings may have the strength of leather three or four times its thickness, and still be flexible, and—what is of far more moment, very cheap. This thin leather thus strengthened may be used for cushions, upholstery work, bindings—and in a score of places where it was heretofore barred out. Mr. Hale tried a simple experiment before the writer that well illustrated the difference wrought by the invention. A piece of skiving, without the reinforcement, was stretched between the fingers, when on the finished side appeared numbers of wide surface cracks, and tears. The same experiment tried on the reinforced stock showed no such weakness.

THE PEERLESS COMBINATION MATTING.

THE effect of light and shade upon rubber surfaces that are embossed or grooved has often been noted. If taken advantage of, some of the most beautiful patterns may be secured, which



have the virtue of being constantly changeable when the point of view is changed. This in a measure has been accomplished in the past by embossed matting. Through a recent invention these effects have been taken advantage of and enhanced in a most systematic way bringing out what is known as the Peerless Combination Matting. This matting is produced from a mold which cost many thousands of dollars, the face plates of which are made up of blocks of metal that are covered with



surface grooves. These are interchangeable, making scores of different styles of mat many of them artistically beautiful. The blocks run 2½, 5, 7½ and 10 inches square. When in the mold these blocks turn on a pivot so that a bewildering variety of effects may be secured. By use of the 5-inch blocks for instance, a great variety of beautiful door mats may be turned out, literally by the mile, and hereafter jobbers will buy door mats by the roll, cutting off the size wanted by the purchaser. A further advantage of this style of mat is that it assures the firmest sort of foothold at any angle. When the smaller blocks are used the most beautiful sort of railroad car mats are made, some of which have already been adopted by the large companies. The illustrations show two of the simpler styles produced by this new process. Manufactured by the Peerless Rubber Mfg. Co., Warren street, New York, N. Y.

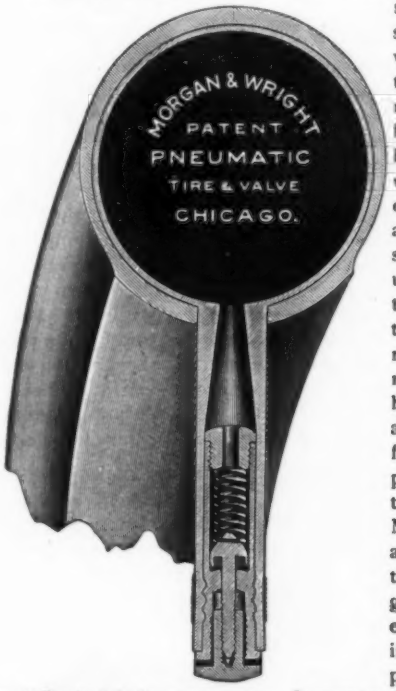
A NEW AND POPULAR SHEET PACKING.

WHAT is known as the Golden Rod Packing has been brought out by a New England house, and after the most careful tests has been pronounced as first-class in every respect. The manufacturer describes it as a perfect non-conductor, and the best packing made, for either high or low pressure, stating that it is especially adapted for very high pressure as it is not affected by any degree of heat. It is neither affected by oils, ammonia, liquors, steam heat or alkalies, and is not liable to burn, char or

crack. It is adapted to pack any kind of steam, or hot or cold air joint equally well, and always makes a tight joint; will not harden or crack under any degree of heat, or blow out under the highest pressure; and takes only a fraction of time to pack a joint that is now consumed with packings that harden. Nor does it require a tool to break the face off the joint. It can be taken out and replaced repeatedly. It is especially adapted for locomotive and steamship use and for steam-heating companies, as joints packed by this are not affected by contraction or expansion. In applying, the joints should be faced with plumbago, lampblack or chalk. This packing is covered by the trade-mark "Golden Rod" and is made up in rolls 1-32, 1-16, 3-32, 1-8, 3-16, and 1-4 inches in thickness and 36 inches wide. The trade-mark "Golden Rod" appears on every yard of the packing. Manufactured by Samuel Kidder, 60 Federal street, Boston, Mass.

THE MORGAN & WRIGHT TIRE.

So many of these tires are in use that it would seem almost superfluous to describe them in detail, were it not for the fact that there are new riders coming to the front every day who have to learn first what the rest of us did but a short time ago. This tire is a simple one, easy to understand and easy to repair. Further than that it is only rarely that it needs repairing. The writer has used this tire on a "Triangle" wheel for several months, a part of the time over the flinty roads of Maine, where the hills are almost mountains, and the tires gave no chance for even an experiment in repairing. The repairing however is not a difficult job by any means. It means the loosening of the cover from the rim, the cutting of a few lacings, the withdrawal of the inner tube which pulls a cord through the cover as it is pulled out, the patching of the inner tube, its return, a touch of gutta-percha cement to the rim, inflation, and it is done. Some very clumsy persons successfully patch these tires and there is rarely trouble with them that a small patch will not cover. The cut shows the tire and valve but does not show the lacing, which begins at the valve stem and runs a short distance from it leaving space enough to take out and return the inner tube. Manufactured by Morgan & Wright, Chicago, Ills.



AN IMPROVED ESSEX SYRINGE.

IT is nearly twenty years since the first Essex syringes were placed upon the market. When they were first brought out the writer remembers distinctly how particular Mr. Essex was to have the best rubber bulbs, the finest tubes, and the best metals for his instruments. For years they have been popular and word comes now that an improved pattern has been put on the market. Mr. Essex calls this the Superior Old Style Syringe. He has three patterns, 1, 2 and 3, fitted with either hard rubber or metal pipes with a flexible tube on each side of the bulb. The bulb is not detachable for use. The No. 1 is fitted with an elbow which obviates the bending of the flexible tube. The Combination Syringes have metal suction pipes and a single neck bulb. The No. 2 has a 22-inch rubber tube all on one side of the bulb, while the Goodyear has 18-inch tube and No. 2 bulb. They are also made in siphon syringes, though without the rubber bag, and the fluid may be therefore unlimited in quantity. Manufactured by A. H. Essex, Fall River, Mass.

THE ROVER CARRIER.

THIS carrier when not in use is a compact roll, about one inch in diameter and when strapped to the handle bar has a very neat appearance and does not, in any manner, detract from the beauty of the wheel. When in use with an ordinary coat and an extra suit of underwear inside, it makes a very compact bundle about five inches in diameter, and when placed in position is perfectly solid and immovable. It is well made in every respect, nothing but the best of materials are used in its manufacture and its weight will not exceed one pound. It is said to be the best carrier in the market to-day, for the following reasons, it is noiseless, dust-proof and water-proof. There is no metal used in its construction excepting the buckles on the straps and the eyelet fasteners. It is made wholly of waterproof material and when in use is folded in such a manner as to make it absolutely impossible for dust or water to penetrate and soil the articles within.

The carrier is peculiarly adapted to tourists or riders who are in the habit of making short excursions in the country. A rider taking a trip usually has a desire to take an article of some description with him too large to be conveniently carried in his pocket. If he is provided with one of the carriers he can take anything, from the size of a lead pencil to an extra suit of clothes, with the assurance that they will be intact when the destination is reached, regardless of the condition of the weather. On account of the heat it is not always agreeable to wear a coat when riding, while to attach it to the frame or handle bar of the wheel by a strap or the ordinary luggage carrier, affords no protection from dust or rain. If however one is provided with a Rover carrier it is cared for without annoyance and with the assurance that it will be perfectly clean and dry at the end of the journey.

It is always agreeable, in fact, necessary for riders having a due regard for their health to take an extra suit of underwear with them to substitute for the suit, wet with perspiration which they have on when their destination is reached. Instead of lounging around the hotel shivering in damp clothes, if one is provided with a Rover carrier he has the solid enjoyment found in a dry suit of underwear. Manufactured by The Unique Manufacturing Co., Columbus, Ohio.

A PNEUMATIC CAR-FENDER.

THIS invention rendered necessary by the growth of rapid transit in the streets of our cities, is so constructed as to overcome the objections advanced by railway companies, and at the same time score a success as a practical life saving device. It has been critically examined by practical mechanics, railway

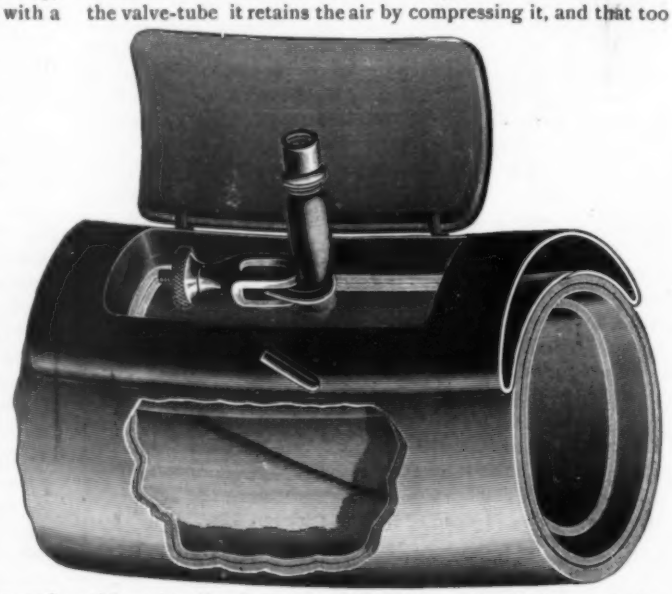
men and other competent judges and received their highest endorsement. The fender is composed of a strong iron frame, cradle shaped, extending the full width of the car, and hooked to the front platform; its edges are bound (front, side and top) with 3-inch rubber pneumatic tubing (or air cushion), with a pliable rope net stretched across the frame. All parts are interchangeable and adjustable, so as to be easily fitted to any car. If repairs should become necessary, they can be made without any delay to the car for the fender can be unhooked and replaced by another in less than two minutes. The great advantage this fender possesses over all others is the pneumatic tubing or air cushioning, which is the best substance human ingenuity has been able to devise, to yield a soft cushioned blow. The height of the front edge of the fender, above the street level is adjustable and ordinarily measures, 2 1-2 to 3 inches. Owing to the rocking motion (up and down) the fender when struck by an object drops to the ground and is held there by a self-locking device until released by the motorman; thus compelling the object to drop or roll over into the netting and remain there until the car is stopped. In addition to this automatic device, the mortorman can by placing his foot upon a treadle, press the fender down and lock it at the same time. When the fender is thus down, two rollers, attached to the under side, run along the track, preventing the fender from wedging itself under the car. At public tests, in Baltimore and Washington, a number of men and boys were run down, in various positions, and picked up by the fender, without the least scratch or bruise, while the car was running at a speed of from eight to twelve miles an hour. Manufactured by the Leonhardt Pneumatic Safety Car Fender Co., 412 E. Saratoga street, Baltimore, Md.

AN ENGLISH PNEUMATIC WHEEL.

AN English rubber concern is manufacturing a wholly pneumatic wheel, consisting of a flat spherical chamber filled with compressed air. The outer shell is made of a slightly yielding material, exceedingly tough, so that it is with difficulty broken or cut into. Inside of this is an India-rubber chamber conforming to the shape of the shell, which is inflated as the ordinary pneumatic tire is. A pair of metallic plates are affixed to the wheel, one on either side, there being an open tube connecting the plates and passing through the center of the wheel. The axle passes through this tube. There is a small valve on the inside of the wheel connecting with the air chamber so that it can be deflated at any time, or, if deflated by long use can be readily inflated. This has been tested on a dog-cart having wheels 26½ inches in diameter and 5¼ inches broad. The vehicle ran very lightly, the jar, when crossing tram rails at right-angles being scarcely perceptible.

VICTOR PNEUMATIC VALVE AND CHOKER.

THERE is always more or less bother with tire valves. They may not really leak, but if the stem is not choked after pumping the tire often loses a certain amount of inflation, when removing the pump and shutting the valve. A common way to choke a valve is to bend it over against the rim of the wheel until a kink is formed, which prevent the air from escaping. This is possible with some forms of valve stems and with others it is not. Nor is it always successful where it is possible. In addition to this, the strain put upon the stem by this species of choking is very apt to result in links in the lower part of it where it is joined to the inner tube for instance, and then ere long one needs a new valve. To save time, patience and air, the choker shown in the illustration has been designed. When attached to the valve-tube it retains the air by compressing it, and that too



without bending it over at right angles to itself, the usual way. This allows of a simple return valve being used, so that a gage may be attached to the valve, and the pressure carried in the tire be accurately registered. A further advantage in this form of valve is that the presence of a little dirt does not clog it. Manufactured by the Overman Wheel Co.

THE COMMON SENSE CHAIR-TIP.

A CHAIR-TIP that is simplicity itself and so easily applied and further than that is so cheap, that it is sure of a large sale, is the new Common Sense. It is, in brief, a rubber tip molded and vulcanized upon a wooden spindle. This spindle can be easily inserted in the bottom of a chair-leg, and will stay in place just as long as one wishes it to. The head of the spindle is first covered with frictioned duck, and about that is wrapped the rubber, which is vulcanized to both duck and wood. Manufactured by Henry F. Knowles, No. 49 Federal street, Boston, Mass.

THE PEERLESS BICYCLE TROUSERS.

RIDERS of the wheel are often uncomfortable because their belt binds or their trousers being tight at the knees, prevent free muscular action. The Peerless Bicycle Trousers overcome this by giving absolute freedom for muscular action. This is accomplished by having a covered elastic attachment at the waist and the knees that is self-conforming and self-supporting. It is designed on scientific principles and makes the trousers models of ease and comfort. The trousers are buttoned with ball and socket fasteners and are made up either in the ordinary style or bloomers. The bloomers are cut extra long, with an elastic at the knees. Manufactured by the Peerless Bicycle Pants Co., 79 Summer street, Boston.

A DETACHABLE FOLDING RUBBER MUD-GUARD.

ACCORDING to bicycle experts, the reasons that the Griswold guard has so large a sale, are, that it is the most simple in construction, when folded is the most compact, that it can be removed entirely from the machine and carried in the pocket, that it is the lightest guard in existence (one complete set weighing less than nine ounces) and that it is made of the finest Pará rubber. It can be adjusted to any Humber pattern frame by simply drawing the wire frame out full length and attaching the hooks on the ends of the wire frame to the rear bars, one on either side of the rim of the wheel, then unrolling as much of the rubber strip as is required to cover the rim of the wheel and attaching the double hook to the brake shoulder under the seat. The strip may be extended further back over the rim of the wheel, by springing the hooks on further out from the center of the wheel so as to throw the frame further back. In attaching the front guard pass the single hook down under the crank bearing and attach it to the front of brake crown. Draw the other end around between the frame and rim of the wheel and attach under the seat. If the rubber strip is too long it can be shortened by rolling up and fastening. The hooks can be easily bent to fit any position or any size of tube. The rubber strips should not be stretched any more than is necessary to have them hang smoothly on the frame. The illustration shows the rubber mud-guards in position, and also folded in a compact parcel that can be carried in the pocket. Manufactured by M. E. Griswold & Co., Washington Heights, Chicago, Ill.

DEATH OF JAMES W. CONVERSE.

JAMES W. CONVERSE, president of the Boston Rubber Shoe Co., died at Swampscott, Mass., on August 26. He was born at Thompson, Conn., on January 11, 1808, and lived successively at Dover and Needham, Mass. Shortly after his thirteenth birthday he went to Boston to lay the foundation for a fortune and found employment with two uncles. At the age of twenty he engaged in business for himself, opening a stall in Boylston market. Four years later the firm of Hardwick & Converse was formed to sell shoes and leather. On January 1, 1833, the famous leather firm of Field & Converse began its successful career, the firm name remaining unchanged until 1870, when Mr. Converse retired to attend to his growing railroad, banking and real-estate interests.

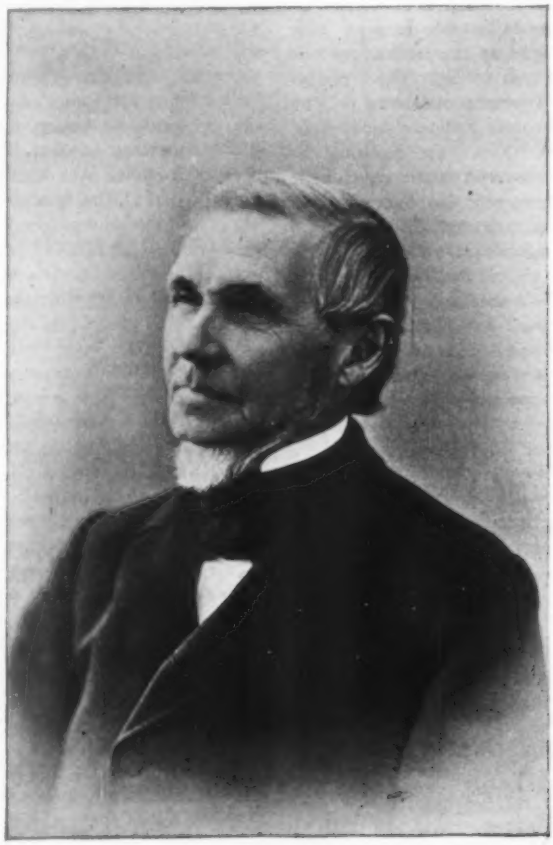
Very early in his business career he went to Grand Rapids, Mich., where he became a large land owner. At the time of his first visit, the little settlement had no railroad connections and most of his journey was done by stage and canal. Later a railroad came within a mile of Grand Rapids, but refused to run a spur track up to the town. Mr. Converse received their refusal calmly, and immediately proceeded to build a road 57 miles in length up to Kalamazoo. Later he was one of the prime movers in the Chicago & Kansas Southern R. R. Co., and was for a long time its president. His energy was not by any means however confined to railroad building. He built a fine bridge, and put up factories, a church, and was prime mover in hosts of manufacturing companies, and the veritable creator of the city of Grand Rapids. He was president of the Phœnix Mfg. Co., the Grand Rapids Furniture Co., the Grand Rapids Agricultural Works, and the Converse Mfg. Co. (at Newaygo). The fact that Grand Rapids grew from a small settlement to a city of over 80,000, was due largely to the energy and foresight of Mr. Converse.

At the time of his death, Mr. Converse was president of the Boston Rubber Shoe Co., the largest in the country, capitalized for $5,000,000. It was principally owned by himself and his brother, the Hon. Elisha S. Converse, the well-known treasurer, general manager and founder of the company. His son, Costello C. Converse, has been for the last few years the company's vice president.

When the old Mechanics' Bank of Boston was organized, in 1836, Mr. Converse became a director. In 1847 he was elected president of the bank, holding that office until his resignation in 1886. In 1870 he was appointed receiver of the old Hartford and Erie railroad (now the New York and New England), which he safely piloted through a hazardous experience. He was interested in the Milwaukee and St. Paul and other western railroads, and had more than $1,000,000 invested in real estate at Grand Rapids, Mich. He was the largest stockholder and the president of the Boston and Colorado Smelting Co. This company had a capital of $1,500,000, and during the twenty years that Mr. Converse administered its affairs, it was wonderfully successful. He was also president of the Boston Land Co.

In 1833 Mr. Converse married Miss Coolidge, who lived until about three years ago. They lived in Jamaica Plain, Mass., from 1845 to 1866, going then into the city of Boston. The funeral occurred on August 29, the interment being at Mt. Auburn. Mr. Converse was a member of the Baptist church, and held a prominent position in its temporal affairs. He always gave liberally to what seemed to be a worthy cause, having spent in charity, it is estimated, $50,000 a year for the past ten years.

In person Mr. Converse was short, slight and wiry. His energy, enthusiasm, and recuperative powers, were a marvel to all who knew him, and seemed practically inexhaustible. His hours for years were from four in the morning until ten at night. Before reaching his office in the morning, he had done what would have been to most men a hard day's work. Nor was this for the sake of gain, but largely because he loved business activity, and had some enterprise in hand at which others had failed, and which he felt could be made successful. It is said of him that when he once took hold of a project, he never let go until it was made a success, no matter what difficulties stood in the way.



JAMES W. CONVERSE.

Although he was the president of the Boston Rubber Shoe Co., almost from the beginning, he did not take an active part in the administration of its affairs. His position there was an advisory one, he being so much the elder of his brother, the founder, that he felt and acted toward him much as a father does toward a son.

From the time when a thirteen-year old boy hoeing corn on a Connecticut farm, he got his father's permission to go to Boston that he might "better help the family," until a brief year ago, he was the busiest of busy workers, and a helper, and burden bearer for scores of weaker ones, worthy and unworthy. His seventy-two years of active work resulted in vast property interests to which his children succeed. A richer inheritance however, to them, is the memory of the strict integrity, the simple kindliness, and the abounding charity, that are synonymous with the name James W. Converse.

RESPECTING the rumor of a rubber factory to be established by Wallace, Elliott & Co. (New York) in connection with their leather-shoe factory at Poughkeepsie, N. Y., the head of the firm, Mr. Henry Elliott, said to an INDIA RUBBER WORLD man: "We have nothing to say about that now." They own or control five large factories for leather shoes, and supply their numerous customers with rubber shoes also, from which they have become the largest jobbers in rubber boots and shoes in the trade.

RESOLUTIONS ON THE DEATH OF JAMES W. CONVERSE.

AT a meeting of the directors of the Boston Rubber Shoe Co., held on Tuesday, August 28, 1894, the following resolutions were unanimously passed:

WHEREAS: The hand of Divine Providence has removed from our midst our President and friend, James W. Converse, we are moved in our sorrow to briefly review the past. We look back to May 6, 1861, when he was elected a director of this corporation, to May 31, 1863, when he became its President, and recognizing the long years of association and service, we keenly realize our loss. It was here that we knew him best and learned to value his character, appreciate his services and cherish his friendship. Be it therefore

Resolved, That we place upon record our profound sense of the loss we have sustained by the death which has deprived our corporation of its official head,—one who for more than twenty-six years presided over the deliberations of this Board with dignity, courtesy and uniform impartiality,—and we record our gratitude also that he was permitted to enjoy such length of days.

Resolved, That we unite in saying that we recognize in his life an example of purity, simplicity and virtue which should be examples to mankind; rising from the humblest beginning, he attained the heights of business success by far-sighted discernment and honest enterprise, and his memory will, we believe, become more precious as men learn to value the principles of business conduct which he exemplified. From such lives men receive hope and inspiration. Firm but courteous, of high honor and irreproachable character, he brought to our councils the fruits of a vigorous intellect, while his extensive information and experience gave great value to his opinions.

Resolved, That we express to his family our respect for his memory, our appreciation of his qualities and our admiration of his philanthropy and benevolence. His loss will be long and seriously felt in many relations of society. We bear testimony that in the retrospect of his long and useful life we find no failure of the full measure of duty in the man and citizen, the head of the family or the Christian.

Resolved, That a copy of these resolutions be communicated to the family of the deceased as an expression of our warm and tender sympathy in their bereavement, and we direct that they be entered upon the records of this Board.

Attest: E. S. CONVERSE, Treas.

W. E. CONVERSE, Clerk.

A TRIFLE GOSSIPY.

IT MAY not be known to all, but William Lincoln Sage, who so successfully markets Colchester rubbers, is the proud owner of the fishing rights on five miles of trout brook in Colchester, Conn. To this place he repairs every spring, where armed with expensive tackle he whips the brook, exulting in the fact that to him alone belong the trout that abound in the stream. As a rule he has no difficulty in impressing his ownership of the privilege upon trespassers, although it is said that the trout do not always respect his claims. One day last spring however, he was treated to a surprise. As he followed the banks, working cautiously toward a favorite pool, he saw with wrathful amazement, that another was fishing it.

"Don't you know that you are trespassing, sir?" said Mr. Sage. "Can't you read that sign?"

The stranger paused to pull in a fine trout and put it in his basket, then adjusted a pair of steel-rimmed spectacles and gazed intently at the sign.

"It says "Keep off the Grass, don't it?" he inquired interestedly.

"Not by a good deal!" was the emphatic reply. "It says trespassers will be prosecuted, and it means what it says."

"Sho! does it? I want to know! Wal, I've fished here ever sense I was a boy, and if I'm trespassin' why so be it. It's good fishin' all the same," and the worthy rustic added another trout to his rapidly filling basket.

"It may be good fishing but those trout will cost you a good many dollars a pound," replied Sage promptly. "Will you tell me your name, or must I follow you home?"

"I aint a bit ashamed of my name. I keep it writ on a piece of paper fur jest sech occasions," returned the other heartily, handing him a card.

That evening Mr. Sage, armed with the card, consulted a worthy Colchester lawyer. He had got over his wrath, but felt that to keep his fishing rights intact he must impress a lesson upon the community. The lawyer, after asking a few questions, said:

"Ordinarily, you would have a clear case of trespass, but not in this instance. You pay farmer Smith, who owns the land on both sides of the brook, for the fishing rights, do you not?"

"Yes."

"Well, according to your description of the place where this trespasser Jones stood, I don't think he was on Smith's land at all. You see there is a place where a strip of Jones' land runs down to the brook. To be sure at the brookside it is only about twenty feet wide, but I think as Jones is a careful man he was probably *standing on his own ground* while fishing."

"Where can I find this farmer Jones?" asked Mr. Sage, "I'll buy his rights too."

"Oh, he's no farmer," was the instant reply. "He works at the rubber factory for Mr. Watkinson."

THE Lotos Club (New York) had Sandow, the strong man, up there one Saturday evening as a guest, and after dinner the talk turned upon foods, and their strength-giving qualities. One gentleman after another related instances where various diets had produced remarkable results. Finally Col. Winans, of the Peerless Rubber Co., spoke:

"Did you hear of the baby that they are raising on elephant's milk?" he asked.

So novel an experiment at once attracted attention, and the Colonel was besieged with questions as to how the food affected the child, how much it took at a meal, etc., etc. At last some one asked what baby it was.

"The baby elephant," was the solemn reply, after which the party went into executive session.

IT may cause the curious to wonder sometimes how so busy a man as the general manager of the Boston Belting Co. can stop to write his name in full every time he signs it. If, however, the enquirer should chance to look at a sign over a paper warehouse but a few doors away, on the same side of the same street as the Belting Co.'s office, he would learn that there was another J. B. Forsyth. This coincidence was the cause of much inconvenience, until the rubber manufacturer adopted the plan of being known not by initials, but as James Bennet Forsyth.

MR. JOSEPH HAMMOND, known to the rubber shoe trade as "Buckle Joe," is an ardent Republican. Not long since he came in conflict with a fellow townsman of Democratic faith, and the man, although a workman, got so effectually in the way of his antagonist that he was ere long at a white heat. The other saw his advantage, and rather unwisely went out of his way to emphasize his triumph in ways as uncalled for as they were irritating. A few weeks ago however the chance for vengeance came. Some excavations were going on in the yard of the buckle factory, and the amateur politician presented himself before Mr. Hammond for a job. He was very humble, and was willing to do anything, even to dig.

"You say you are willing to dig?" asked Buckle Joe, his eye lighting with sudden interest.

"Yes, sir, I am that!"

"Very well, go and dig bait for Cleveland," was the withering reply."

AT one time the late Henry G. Tyer, founder of the Tyer Rubber Co., had quite a large business in France. It was very prosperous, and he was apparently as well off as if he were living in free America, except that the government carefully opened all of his letters before they reached him. As his English and American neighbors suffered no such inconvenience, he was puzzled to account for it. Finally an official confided to him, in a burst of confidence, that the names Tyer and Thiers were so near alike that relationship was suggested, which accounted for the surveillance.

NIGHT SCENE IN A RUBBER STORE.

A BOSTON rubber man is to blame for this:

"I heard a scream. What's the Mat-ter?" called the Stair Tread.

"The Hot Water Bottle kissed the Ice Bag," tattled the Mud Guard.

"Bounce him," yelled the Football.

"He makes me Tired," said the Bicycle.

"Impudent little Squirt," sputtered the Syringe.

"O, I'm Reel sorry," sighed the Garden Hose. "Why don't he wait till the Gas gets low?"

"It ought to be stopped," said the Force Cup. "If I had my way I'd send them both Packing."

"O, quit your kicking," called the Wading Boots. "I move that the Rubber Band play a waltz and that we Foot the light fantastic Toe."

TRADE AND PERSONAL NOTES.

REFERRING to the action of the rubber-shoe concerns in offering an extra discount for summer sales, the Boston *Journal* says: "What the United States Rubber Co. have done all other manufacturers and business men have been doing. That is seeking to stimulate trade through a clipping of their own profits. It is an assertion that, we imagine, no one will contradict that what business has been done the past six months has been done at a smaller profit than for any period since 1873."

—The opening of a new rubber-goods store at Lewiston, Me., is announced—that of Henry O. Tourville, No. 178 Lisbon street. He will make a specialty of mackintoshes.

—The National Board of Cycle Manufacturers announced that it will hold the first exhibition of bicycles and accessories at Madison Square Garden, New York, in the week commencing January 19. Advance information may be had from Frank W. Sanger, manager of the Garden.

—The New York Mackintosh Clothing Co., have been incorporated to manufacture and deal in rubber goods and waterproof clothing in New York city with $10,000 capital. The directors are James W. Godfrey, of Yonkers; Erastus S. Foster, of New York, and Robert H. Welles, of Elmira.

—The Boston Rubber Shoe Co., according to reports in the local newspapers last month, were making 21,000 pairs of boots and shoes daily at the Fells factory and 30,000 pairs at Edgeworth.

—Application has been made for a charter for the Dominion Rubber Reclaiming Co., at Montreal, Que., "for the purpose of manufacturing rubber stock, reclaimed rubber, and articles in which rubber is contained, and especially to supply reclaimed rubber to rubber manufacturers." The capital stock is to be $100,000. The incorporators are William Clendinneng, founder; William Currie, clothier; William T. Costigan, William D. Lighthall, advocate, all of Montreal; and Francois Dagenais, manufacturer, of the city of St. Henri.

—The removal from Colchester, Conn., of the important rubber-manufacturing interest has caused the leading merchants and real-estate owners there to organize a board of trade for the purpose of inducing other industrial concerns to locate there. Edward L. Strong is president; H. P. Buell, vice-president; C. H. Dawley, secretary and treasurer; and Henry H. Brown, corresponding secretary.

—The Woonsocket Rubber Co., says *Shoe and Leather Facts*, are the principal exporters of rubber shoes from the United States, and have been for several years. "It is thought that, if the styles of rubbers changed as frequently as those of leather boots and shoes, the demand abroad for rubbers would be much greater than now." The value of exports of rubber shoes from Boston in July was $26,052.

—The Baltimore agent of the Woonsocket Company wrote to *Boots and Shoes Weekly* on August 18, offering to donate fifty cases of rubber shoes to charity "if the Woonsocket Rubber Co., through its Baltimore agent, does not distribute twice as many rubber boots and shoes as the agents here of the other six companies combined from April 1 to September 1, 1894."

—The Brook Haven Rubber Co. (Setauket, L. I.) have, as already announced, given up the manufacturing of rubber boots and shoes. They are now thoroughly equipped for the manufacture of all kinds of pneumatic, solid and cushion tires, and any one desiring to get a tire manufactured and placed on the market can make good arrangements with them. Their New York office is at Nos. 88-90 Reade street.

—There has been registered in London a new company—A. Hutchinson & Co., Limited—for the purpose of acquiring the business of the wholesale India-rubber manufacturers, A. Hutchinson & Co., whose works are at Langlee, France, and Mannheim, Germany, with chief offices in Paris. The capital is £130,000 ($650,000), in 8000 preference and 5000 ordinary shares of £10 each respectively.

—The Duluth Rubber Co. is the name of a new jobbing concern at Duluth, Minn. They will handle the goods of the Woonsocket Rubber Co.

—The Candee Rubber Co. have had made for distribution to their patrons a large and very handsome lithograph of their great factory at New Haven. The picture cannot fail to impress one with an idea of the extent and the importance of a business demanding such buildings as are shown in it.

—The jobbing business of E. B. Preston & Co. (Chicago) is reported by the *Boot and Shoe Recorder* to have amounted to $215,000 three years ago, $360,000 in the year following, and $450,000 last year. They hope, with favorable weather, to pass the $600,000 mark in the season of 1894-95.

—Mr. John Deakin, of Gloucester City, N. J., is at present at work for the N. Y. Belting & Packing Co. at their reclaiming plant at Sandy Hook, Conn.

—Mr. R. E. J. C. Teale, formerly agent for the N. J. Car Spring and Rubber Co. has connected himself with the Gutta Percha & Rubber Mfg. Co., New York.

—The N. Y. Belting & Packing Co. recently secured an order from Denver, Col., for ten thousand feet of rubber fire hose.

—Mr. Charles T. Wood, who runs a rubber agency at 67 Chauncy street, Boston, is having a very large sale of cravenette garments both for masculine and feminine wear.

—On Tuesday, the 18th of September, there will be an auction of rubber machinery covering comb, button and plumber's machinery at the rubber factory at Wappinger's Falls, N. Y., the sale beginning at 10 o'clock. In a letter Mr. S. R. Brown, the proprietor, says,—"I shall not offer the real estate or steam plant, neither rubber rolls nor vulcanizers at this sale."

—Mr. Harry B. Hall, formerly of the Hall Rubber Co., who now owns a prosperous rubber store at 109 Summer street, Boston, is on the lookout for specialties to place in and about Boston. Mr. Hall is well known as an active and successful salesman, and is just the man to market specialties.

—"The War between China and Japan and the probable effect on the Market," is the title of a circular issued by a rubber company. After securing the attention by speaking of this fracas between the almond eyed Orientals, the circular goes on to speak of the fact that America will be called upon to furnish the Celestials and Japs with the necessaries of life. Under the heading, "Condition of Crops" the publishers speak of the crop of stationers' supplies, electrical goods and druggists' sundries in such an original manner that whether one is a buyer or not he will read it through. Issued by the Goodrich Hard Rubber Co., Akron, Ohio.

—Joseph Canfield, son of H. O. Canfield of the Canfield Rubber Co., Bridgeport, has proved himself a hero. In company with his two younger brothers and another boy he recently started out on Long Island Sound for a trip in the little yacht *Teaser*. A high wind was blowing, and when near Fairfield beach the boys lost control of the boat and she was driven on to a sand-bar some distance from the shore. The waves broke over the little craft, and the boys had all they could do to pre-

vent being washed off. None of them were strong swimmers and they dared not attempt to reach the shore. A party on another boat saw their peril and went to their assistance. They had room for three only, and young Joseph insisted that they take his two younger brothers and his friend, and leave him to take his chances with the boat. This was finally done but before the boat could return for him a huge wave struck the yacht and washed the boy off. He was able to swim for the shore, and after an exceedingly hard struggle succeeded in reaching it very much exhausted. He took the whole matter very coolly and is disinclined to have his act considered as especially heroic.

—An English rubber manufacturer while visiting a large rubber plant in this country, turned to the proprietor and said: "What you have shown me is a great surprise. I am perfectly willing to confess that we have no such machinery, system, or factories as you have."

—Mr. Willis Darling, of the Boston Woven Hose & Rubber Co., accompanied by his wife and boy, took an August outing at Camp Sunshine on Moosehead Lake this summer.

—Mr. Wm. T. Barutio, who was for a long time a commission dealer in mechanical goods in Boston, is now in New York attending to the railroad trade in the same line.

—H. D. Warren, Prest. of the Gutta Percha & Rubber Mfg. Co., of Toronto, a former New Yorker, is one of the most popular men in his adopted city. He is a member of all the swell clubs, and is one of the experts at that difficult game known as curling.

—It is reported that one of the finest turnouts at the great Eastside Coaching parade at North Conway, N. H., in August, was that of Mr. George H. Hood, of the Boston Rubber Co.

—The Indianapolis Rubber Co. have obtained a building permit for a brick addition to their factory, to cost $4000.

—A suit for damages in the sum of $10,000 has been filed against the United States Rubber Co. at New Brunswick, N. J., by an employé named William Sauer. He was injured by a fire which occurred while he was using benzine in the company's works in December last, and negligence on the part of the company in not having properly arranged for the work is charged.

—The Union Metallic Co. (Bridgeport, Conn.) have placed an order for three large buildings with the Berlin Iron Bridge Co., of East Berlin, Conn. The new power-station for the Hartford (Conn.) Street Railway Co., will be designed and built by the Berlin Iron Bridge Co. It will be 66 feet wide and 233 feet in length, with a steel frame covered with the Berlin company's patent anti-condensation corrugated iron covering. When completed, it will be one of the most complete stations of the kind in the country, and will be absolutely fireproof.

—The Western Linoleum Co. (Akron, Ohio) send out a catchy circular headed "Smiles," which gives some reasons why business men should feel good over the trade prospects, after which the subject of their "Acorn" brand of oil-cloths is effectively introduced.

—The store of the E. W. Hull Rubber Co., at Cleveland, Ohio, was closed by the sheriff, on account of an attachment against the concern for $11,772.85. E. W. Hull made an assignment for the benefit of his creditors and H. S. Davis was appointed receiver for the company.

—Senhor Manoel Vianna Coutinho, of Pará, Brazil, who has been mentioned in THE INDIA RUBBER WORLD in connection with improvements in the curing of rubber, while in New York recently, visited our offices.

—It is said that the Granby Rubber Co. (Granby, Que.) have one of the best equipped rubber shoe factories in North America, although the plant is not a large one. Their output is about 2500 pairs a day.

—Mr. R. F. Sears, head of the Pará house of Sears & Co., arrived in New York on the *Turkish Prince* on August 17, and a few days later sailed for a brief visit to Europe.

—The Farrel Foundry and Machine Co. (Ansonia, Conn.) have lately received an order for several mixing mills from the Russian American Rubber Co., of St. Petersburg, Russia.

—Mr. Geo. F. Virtue, of Spinney, Virtue & Co. (Lynn), is taking a two weeks' business trip in the West.

Samuel Kidder (Boston) has just started his six traveling men out on the road and anticipates a good Fall trade particularly in his rubber specialties.

—Henry F. Knowles (Boston) started the season with his Federal street warehouse piled from floor to ceiling with bales of garden hose. Now that the season has closed he has but a few bales left, giving the room a singularly empty look, although most satisfactory to the proprietor.

—Cornelius Callahan (Boston), the veteran manufacturer of knit fire hose, is successfully operating a plant at Canton Junction, Mass.

—Mr. H. E. Converse, Asst. Mgr. of the Boston Rubber Shoe Co., took but two days vacation this summer, the rush of orders compelling his constant attendance at the Boston office.

—The Garland Mackintosh Co. is the name of a new concern manufacturing mackintoshes at Howell, Mich.

—One of the best fitted and most practically run rubber stores is that of the Toronto Rubber Co., at Toronto, Canada. It is worth one's while to take a run into Canada to see what can be done in the way of effectively displaying rubber goods.

—C. J. Bailey (Boston) the distributor of rubber bath and complexion brushes for the civilized world, will show a new specialty in rubber in next month's INDIA RUBBER WORLD.

—Mr. H. F. Taintor, who supplies whiting to the largest concerns in the rubber trade, instead of spending a part of the summer at Lake Champlain, bass fishing, was detained in New York by illness. He is now fully recovered, however, and contemplates a short autumn trip in pursuit of his favorite sport.

—The American Steam Packing Co. (Boston) are about to place on the market a new packing known as the Asbesto-Metallic packing.

—The Mason Regulator Co. (Boston) whose steam specialties are in almost all rubber factories, are manufacturing a new type of boiler feed pump that is said to be a marvel of economy and efficiency.

—Mr. Chester J. Pike, sales-agent for the Wales-Goodyear Rubber Co., found that the rarefied air about the Rangely Lakes did not suit him as well as he anticipated. He therefore shortened his stay and returned to the Hub. As a matter of fact Boston is about as comfortable place in hot weather as most summering places.

—The Overman Wheel Co. (Chicopee Falls) are running their model rubber factory not alone on tires, but also on foot balls and various sporting goods in rubber.

—Dr. M. L. Chamberlain, a well-known Boston physician, has invented a horseshoe that is a cunning combination of metal and rubber, and that is said to be very successful.

—E. H. Best & Co., Federal street, Boston, report a lively trade in rubber printers blankets.

—Prof. Carmichael (Boston), of indurated fiber fame, claims that the rubber cuspidor is a thing of the past, its place being largely taken by goods made of fiber.

—The Riverside Rubber Works (Belleville, N. J.) are on the market with a new type of rubber syringe.

—The United States Rubber Co. will open an office in Philadelphia, having secured authority from the secretary of the commonwealth of Pennsylvania.

—The Sheriff has placed a keeper in charge of the place of business of the Chinnock Pneumatic Tire Company, at Nos. 9 and 11 West Broadway, on claims aggregating $1173 in favor of four creditors, the largest being an attachment for $826, in favor of the Commonwealth Rubber Company. The company was incorporated under New Jersey laws in February last, with an authorized capital of $250,000 by Geo. H. Chinnock, Abram L. Smith, H. E. Brundage, Edward Alcott and others.

—Mr. C. Edward Murray and Mr. John H. Britton (Trenton) have formed a partnership to carry on the business of general merchandise brokerage. Their line at present is rubber mill supplies. Both of the gentlemen have many friends in the trade and should do a large business.

—The chief points of a good piston-packing are minimum of wear, snugness of fit to prevent the escape of steam, ease of adjustment, and self-lubricating properties. All these are combined in "Vulcan" spiral piston-packing, manufactured by the New York Belting and Packing Co., Limited, No. 15 Park row, New York. The materials used in its production are of a superior grade. The spiral form obviates any bending or fitting, as the coil readily adapts itself to any size of piston-rod. The wear is slight owing to the fact that only the edges of the fabric are brought in contact with the piston rod. The whole packing is thoroughly saturated with a lubricating compound which feeds itself automatically to the rod as needed. Sizes from ¼ inch to 1½ inch are kept in stock, and other sizes of "Vulcan" are made to order, if desired.

—J. R. Grant & Co. have opened an office at No. 36 Vesey street, New York, for the sale of hose, belting, packing, and mechanical rubber goods generally, together with fire-department and mill supplies. Mr. Grant was recently in the employment of the New York Belting and Packing Co., and was previously, for twenty-three years, connected with the Erie railway. He is, therefore, thoroughly acquainted with the requirements of the railway purchasing agent, and may be expected to make an active canvass of this particular branch of the trade.

—The Home Rubber Co., of Trenton, have just installed hose-machines and are delighted with the work that they turn out.

—At the factory of the National India Rubber Co, recently the pay-roll contained 1338 names and the week's payment amounted to over $11,000.

—Mr. Joseph Elberson, of the Brookhaven Rubber Co., who has turned his attention to mechanical rubber goods, is already making himself felt as a bidder for large work.

LIFE-PRESERVERS FOR A NAVY-YARD.

THE United States Navy Department opened bids on August 21 for supplying the Washington navy-yard with 2365 rubber life-preservers, cotton duck, drill, each to be enclosed in a cotton-duck bag weighing 8 ounces. Three sizes are required,—42, 45, and 48 inches in length—all to be 10 inches wide—and, when inflated, not more than 2 inches thick. Some of the other requirements are: rubber used not to be less than 80 per cent. pure Pará gum; to have a supporting capacity in water of 22 pounds, dead weight; not to weigh over 3 pounds; to be guaranteed by the manufacturer for three years. There was only one bidder, the Hodgman Rubber Co., of New York, at $6917.63. The goods are required to be delivered by October 1.

GUTTA PERCHA NOT RUBBER.

IN the July issue of THE INDIA RUBBER WORLD appeared a reprint from the Philadelphia *Times* entitled "Rubber for Quick Mending." The article extols the value of rubber tissue, and describes in detail how it may be utilized for various repairs, by simply heating it with a hot iron. It may be that the writer knew that it was Gutta-percha tissue that he was describing, and that he simply used the term by which it is often known. As a matter of fact buyers of rubber goods so confuse India-rubber and Gutta-percha that the names are more or less interchangeable even by those who know better. Gutta-percha tissue is however the only article sold for such mending as the *Times* describes.

REVIEW OF THE RUBBER MARKET.

THE improvement in business conditions which, by common consent, has been inaugurated in the United States, is being reflected in the rubber manufacturing and distributing trades. The conclusion of the various industrial disturbances of the past year and the settlement by Congress of the vexed questions which have had their effect in paralyzing business, have given the people of the country an opportunity to take a clear view of their condition, with the result that the outlook is better than was expected. The country was never so wealthy before; there is no lack of money for those who have anything to offer for money; all classes have been practising economy in buying until not only is there now a necessity for heavier buying everywhere, but for the most part the people have the means to buy with.

The prospect is good, therefore, for the manufacturers of rubber goods. The details of the activity of the rubber shoe factories have already been given sufficiently in this journal, and the other lines of manufacture, while comparatively less active, have not been without importance in the field of trade. There is reason, however, to expect, in the natural course of things, a larger output of mechanical rubber goods. The whole situation gives promise of a strengthened demand for crude rubber—sufficient in itself to give firmness to the market. The increase in the prices of Pará grades over our quotations for last month has been attributed to a speculative movement involving all the available supplies on both sides the Atlantic and up the Amazon, but such a movement would not be needed to give an upward tendency to prices, at a moment when there is hopefulness in every department of trade.

The latest quotations in the New York market are:

Pará, fine, new t a	67½@69½	Sierra Leone	20@38
Pará, fine, old	71@74	Benguela	45@46
Pará, coarse, new t a	45½@53½	Kongo Ball	37@40
Pará, coarse, old		Camaroon Ball	34@36
Caucho (Peruvian) strip	43@44	Flake, Ord. and Lump	24@25
Caucho (Peruvian) ball	47@48	Accra Flake	14@15
Mangabeira, sheet	35@38	Liberian Flake	21
Esmeralda, sausage	47@48	Primest Pinky Madr	59@61
Guayaquil, strip	27@33	Madagascar, black	42
Nicaragua, scrap	45@47	Borneo	26@40
Nicaragua, sheet	43@44	Gutta-percha, fine grade	1.30
Thimbles	35@36	Gutta-percha, medium	1.00
Tongues	30@35	Gutta-percha, hard white	85

PRICES FOR AUGUST.

	1894.		1893.		1892.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First	65	42	66	43	65	43
Highest	67	45	66	43	65	43
Lowest	65	41	65	41	63	41
Last	67	45	66	42	63	42

The statistical position of Pará rubber in New York and elsewhere is as follows, the figures expressing tons:

	Fine and medium.	Coarse.	Total.
Stock, July 31, 1894	1035	53	1088
Arrivals, August	283	149	432
Aggregating	1318	202	1520
Deliveries, August	372	156	528
Stock, August 31	946	46	992
Stock in England, August 31			960
Deliveries in England, August			622
Pará receipts, August			1190
Stock in Pará, August 31			475
World's supply, August 31 [Excluding caucho.]			2959

AFRICAN RUBBER IN ENGLAND.

THE market for medium grades on the other side has remained firm, and an advance has been paid for some qualities. We note the following sales: 17 tons Niger Niggers at 1/4; 30 tons Thimbles at 1/4¾@1/5; 5 tons BG Cameroon Ball at 1/3½; 5 tons Benguela Niggers at 1/9½; 30 tons Rangoon at 1/6, and 35 tons Madagascar Niggers at 1/3. To-day's quotations are as follows:

Accra Flake	6/½d
Accra, Cape Coast and Saltpond Biscuits	1/10½
Accra Biscuits, best quality	1/10½
Addah Niggers	1/8½
Benguela Niggers	1/9½
Cameroon Clusters	1/5½ @ 1/8
Gaboon Lump	11½
Gaboon Flake	11d
Loanda Niggers	2/3½ @ 2/4
Old Calabar	1/1½ @ 1/2
Sierra Leone Niggers	1/5 @ 2/-
Thimbles	1/5
Madagascar, pinky	2/4
Madagascar, black	1/8
Mozambique Ball, prime	2/2¼

In addition to the sales noted above, about 100 tons fine Pará were sold at prices ranging from 2/9¼@2/10½. These sales have been made to a speculative demand rather than for consumption.

LIVERPOOL RUBBER STATISTICS.

	Pará grades.	Africans.
Stocks on July	2,806,720	1,322,840
Arrivals during August	748,160	353,920
	3,554,880	1 676,760
Stocks, August 31	2,161,600	1,330,560
Deliveries during August	1,393,280	346,200
As against deliveries during July	891,520	928,360

The stock of Pará rubber on Aug. 31 consists of:

	Fine.	Entre-fine.	Negroheads.	Total.
First hands	439	94	146	679 tons.
Second hands	218	54	14	286 "
Total	657	148	160	965 "

Stock of Ceará rubber on Aug. 31, 83 bales; stock of Peruvian rubber, 17 tons.

In regard to the financial situation Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper, New York, advise us as follows:

"There has been an improvement in general business since Congress adjourned, and consequently a better demand for money, resulting in an advance in rates of say 1 per cent. all around; and we quote prime bills receivable, 4 @ 4½ per cent., prime single-name notes 5½ @ 6 per cent., 3 to 6 months maturity, and the tendency is to advance further as business improves."

THE SITUATION IN PARA.

SINCE our last advices (August 9) the rubber market has remained firm, thanks to a fair general demand and the continuance of limited entries. Arrivals, however, have not been confined to Island rubber only, as the first large lots from upriver, consisting chiefly of about 120 tons of Madeira rubber, made their appearance in the meantime. They attracted considerable attention and were promptly disposed of at the full price of 5/950 for fine and 4/100 for coarse, a parcel of dry fine selling as high as 6/100, while the principal transactions in Island rubber took place at 5.450 for fine and 3.100 for coarse. At the close the tone is less firm in consequence of the advancing tendency of exchange. The receipts of this crop, dating from July 1, amount to 1450 tons as against 1700 tons same period last year.

The closing quotations are:

Pará fine 2/5¾
Pará coarse 1/5¼
Upriver fine 2/8
Upriver coarse 1/9¾
} Sterling per pound English f. o. b. not including shrinkage, freight and insurance.

Exchange, with slight fluctuations, has generally followed a rising tendency, but after touching 9½d. became weaker, the rate closing again firm and advancing at 9 5/16 to 9 3/8d.

R. F. SEARS & CO.

Pará, Brazil, August 20, 1894.

IMPORTS FROM PARA.

THE imports in detail of rubber direct from Pará at the port of New York, since our last report, have been as follows, all quantities being expressed in pounds:

August 5.—By the steamer *Cyril*, from Pará and Manáos:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	124,600	9,300	43,300	64,750	241,950
Reimers & Meyer	39,500	900	27,650	3,100	71,150
Joseph Banigan	7,500	1,450	21,800	2,000	32,750
Shipton Green	16,300	2,400	8,500	3,400	30,600
G. Amsinck & Co.	.....	.....	.....	11,400	11,400
Boston Rubber Shoe Co.	5,000	350	1,400	2,000	8,750
P. Lima	1,850	.....	1,900	.....	3,750
Total	194,750	14,400	104,550	86,650	400,350

August 16.—By the steamer *Turkish Prince*, from Pará:

New York Commercial Co.	28,000	7,500	30,500	2,000	68,000
Lawrence, Johnson & Co.	.....	.....	33,600	.....	33,600
Reimers & Meyer	.....	.....	4,800	.....	4,800
R. F. Sears & Co.	4,000	350	9,000	.....	13,350
Total	32,000	7,850	77,900	2,000	119,750

August 23.—By the steamer *Justin*, from Pará and Manáos:

New York Commercial Co.	54,300	8,200	25,700	500	88,700
Reimers & Meyer	10,700	5,700	30,600	.....	47,000
Shipton Green	9,500	1,500	4,200	.....	15,200
Joseph Banigan	300	1,500	9,600	1,000	12,400
R. F. Sears & Co.	1,800	....	3,000	....	4,800
Total	76,600	16,900	73,100	1,500	168,100

August 29.—By the steamer *Lisbonense*, from Pará and Manáos:

Reimers & Meyer	113,900	7,100	18,600	.....	139,600
New York Commercial Co.	55,100	5,800	9,300	11,200	81,400
Joseph Banigan	2,900	4,600	21,700	300	29 500
Lawrence, Johnson & Co.	.....	.....	10,800	.....	10,800
Boston Rubber Shoe Co.	3,900	700	1,600	500	6,700
Shipton Green	2,100	.....	1,000	.....	3,100
G. Amsinck & Co.	.....	.....	.....	5,200	5,200
Total	177,900	18,200	63,000	17,200	276,300

September 4.—By the steamer *Lancastrian Prince*, from Pará:

New York Commercial Co.	65,000	4,000	7,000	.....	76,000
R. F. Sears & Co.	.....	.....	2,000	.....	2,000
Total	65,000	4,000	9,000	.....	78,000

August Imports from Pará	964,500
July Imports	645,300
June Imports	1,591,300
May Imports	926,300
April Imports	2,566,868
March Imports	2,177,400
February Imports	2,309,402
January Imports	3,750,000

OTHER NEW YORK ARRIVALS.

BELOW will be found in detail the imports at New York, during August, 1894, of India-rubber from Mexico, Central America, and South America, other than Pará grades; also, arrivals at New York of African and East Indian sorts:

CENTRALS.

	POUNDS.
AUGUST 1.—By the *Finance*=Colon:	
A. Santos & Co	5,467
G. Amsinck & Co	1,314
Roldan & Van Sickle	4,741
Piza, Nephews & Co	3,267
Bock & Co	554
Dumarest & Co.	180
Hirzel, Feltman & Co	900
C. R. Flint & Co	3,000
Hoadley & Co	651
Munoz Espriella & Co	3,452
E. E. Britton & Co	2,000
W. R. Grace & Co	1,000
Total	27,426
AUGUST 3.—By the *Bermuda*=Greytown:	
Andreas & Co	10,000
G. Canton	1,500
Munoz Espriella & Co	500
G. Amsinck & Co	10,000
Eggers & Heinlein	400
A. S. Lascelles & Co	200
W. R. Grace & Co	200
To Order	300
Total	23,100
AUGUST 5.—By the *Seguranca*=Tampico:	
Ward & Huntington	200
H Marquardt & Co	450
Total	650
AUGUST 7.—By the *Athos*=Cartagena:	
J. Aparicio & Co	400
Thetle & Quach	400
D. A. de Lima & Co	1,300
Pim, Forwood & Kellock (London)	4,700
London or Hamburg	1,400
Total	8,200
AUGUST 13.—By the *Galileo*=Bahia:	
Herbst Brothers	7,000
To Order	4,200
Total	11,200
AUGUST 12.—By the *Alliance*=Colon:	
A. Santos & Co	10,259
G. Amsinck & Co	1,206
W. R. Grace & Co	1,750
Hirzel, Feltman & Co	600
C. R. Flint & Co	11,515
New York Commercial Co	9,200
Bock & Co	553
Lamman & Kemp	1,000
J. M. Ceballos & Co	2,900
Kuhnhardt & Co	1,000
Dumarest & Co	615
Total	40,598
AUGUST 13.—By the *City of Pard*=Colon:	
Munoz Espriella & Co	818
R. F. Cornwell	1,394
J. Aparicio & Co	228
Samper & Co	1,390
G. Canton	1,136
W. R. Grace & Co	1,174
A. N. Rotholz	1,038
Total	7,178
AUGUST 13.—By the *Orizaba*=Vera Cruz:	
Graham, Hinkley & Co	150
AUGUST 13.—By the *Adirondack*=Cartagena:	
W. R. Grace & Co	2,400
AUGUST 14.—By the *New Orleans*=New Orleans:	
Andreas & Co	1,500
W. H. Crossman & Bro	1,300
Earle Brothers	12,700
Total	15,500
AUGUST 17.—By the *Castilian Prince*=Mexican ports:	
Fred. Probst & Co	150
AUGUST 20.—By the *Yumuri*=Vera Cruz:	
Medina	300
AUGUST 21.—By the *Irrawaddy*=Port Spain:	
C. R. Flint & Co	800
Thebaud Brothers	3,000
Total	3,800
AUGUST 23.—By the *Colombia*=Colon:	
Andreas & Co	6 000
Isaacs	1,500
Total	7,500
AUGUST 23.—By the *Advance*=Colon:	
New York Commercial Co	5,300
J. M Ceballos & Co	3,300
A. Santos & Co	6,000
Bock & Co	2,690
Total	17.290
AUGUST 23.—By the *El Sol*=New Orleans:	
Earle Brothers	7,900
AUGUST 24.—By the *Panama*=Vera Cruz:	
E. Zaranz & Co	1,050
AUGUST 27.—By the *Seneca*=Mexico:	
H. Marquardt & Co	300
Forrest	300
Theo. Herrman	300
Total	900
AUGUST 28.—By the *Alene*=Cartagena:	
Punderford & Co	1,000
W. R. Grace & Co	800
J. Ferro	700
Ellinger Brothers	600
Total	3.100
AUGUST 28.—By the *Knickerbocker*=New Orleans:	
W. H. Crossman & Brother	4,400
Earle Brothers	4,500
W. R. Grace & Co	5,500
Gillespie Brothers	1,700
Total	16,100
Total Centrals for August	204,342
Total for July	176,747
Total for June	212,186
Total for May	174,905

BALATA.

	POUNDS.
AUGUST 5.—By the *Prinz Willem*=Paramaribo:	
D. A. De Lima & Co	100
Earle Brothers	5,300
Total	5,400
AUGUST 14.—By the *Adirondack*=Cartagena:	
D. A. De Lima & Co	100
AUGUST 21.—By the *Irrawaddy*=Port Spain:	
Stockbridge & Co	900
Cadenas & Co	6,900
Total	7,800
AUGUST 25.—By the *Prinz Fredrick Hendrik*=Paramaribo:	
To Order	6,100
Total Balata	19,400

AFRICANS.

	POUNDS.
AUGUST 2.—By the *Persia*=Hamburg:	
George A. Alden & Co	4,621
AUGUST 2.—By the *Umbria*=Liverpool:	
Reimers & Meyer	6,238
AUGUST 2.—By the *Friesland*=Antwerp.	
George A. Alden & Co	7,022
AUGUST 2.—By the *Chester*=Southampton:	
W. A. Brown & Co	4,384
AUGUST 9.—By the *Bovic*=Liverpool:	
Reimers & Meyer	22,420
AUGUST 9.—By the *Russia*=Hamburg:	
George A. Alden & Co	20,076
AUGUST 9.—By the *Aurania*=Liverpool:	
Reimers & Meyer	9,467
AUGUST 9.—By the *Rhyaland*=Antwerp;	
George A. Alden & Co	4,414
AUGUST 14.—By the *Donna Maria*=Lisbon:	
George A. Alden & Co	66,059
Perry, Ryer & Co	22,469
AUGUST 14.—By the *Germanic*=Liverpool:	
George A. Alden & Co	753
AUGUST 24.—By the *Campania*=Liverpool:	
Reimers & Meyer	10,749
AUGUST 31.—By the *Umbria*=Liverpool:	
Reimers & Meyer	3,467
W. A. Brown & Co	11,317
AUGUST 31.—By the *Rhaetia*=Hamburg:	
George A. Alden & Co	1,754
AUGUST 31.—By the *Taurie*=Liverpool:	
George A. Alden & Co	834
AUGUST 31.—By the *Majestic*=Liverpool:	
Reimers & Meyer	20,000
Total Africans	216,544
Total Africans for July	269,792
Total Africans for June	324,908
Total Africans for May	363,037

EAST INDIAN.

	POUNDS.
AUGUST 14.—By the *Paris*=London:	
Reimers & Meyer	7,797
AUGUST 9.—By the *Pennland*=Southampton:	
W. A. Brown & Co	3,046
AUGUST 9.—By the *Ethiopia*=Glasgow:	
George A. Alden & Co	9.294
AUGUST 14.—By the *America*=London:	
George A. Alden & Co	6,786
Reimers & Meyer	3 121
AUGUST 24.—By the *Anchoria*=Glasgow:	
George A. Alden & Co	14,601
AUGUST 24.—By the *Greece*=London:	
Reimers & Meyer	1.971
AUGUST 24.—By the *Europe*=London:	
George A. Alden & Co	15,125
AUGUST 31.—By the *New York*=London:	
George A. Alden & Co	10,426
Total East Indian	72,167
Total East Indian for July	218,731
Total East Indian for June	51,121
Total for May	68,990

BOSTON ARRIVALS.

	POUNDS.
AUGUST 3.—By the *Carlisle City*=London:	
George A. Alden & Co., Africans	4,800
AUGUST 8.—By the *Barmen*=Hamburg:	
Reimers & Meyers, Africans	18,000
AUGUST 14.—By the *Motley*=Africa:	
George A. Alden & Co., Africans	40,000
AUGUST 23.—By the *Venetian*=London:	
George A. Alden & Co., Africans	3,800
AUGUST 28.—By the *Polynesia*=London:	
George A. Alden & Co., Africans	14,600
AUGUST 30.—By the *Virginian*=London:	
Reimers & Meyers, East Indians	24,000
Total for Boston	105.200
Total for July	58,000
Total for June	20,500
Total for May	21,280
Total for April	136,200
Total for March	111,250
Total for February	154,140
Total for January	58,600

NEW ORLEANS.

AUGUST.

	POUNDS.	VALUE.
From Nicaragua	41,713	$13,637
From Colombia	938	302
Total	42,651	$13,939

OTHER PARA ARRIVALS.

AUGUST 24.—By the steamer *Teutonic*, from Liverpool:
Reimers & Meyer 8,811

AUGUST 31.—By the steamer *Tauric*, from Liverpool:
George A. Alden & Co 46,033

AUGUST 31.—By the steamer *Majestic*, from Liverpool:
George A. Alden & Co 18,360